XE
.V3
v. 7
#1

EVANSIA

Volume 7 Number 1

Delaware Mosses

Bruce Allen - 1

Should mosses have common names? Part 3.
The Common Names of the Primitive Orders

Janice M. Glime & Zen Iwatsuki - 9

The Distribution of North American Bryophytes
***Isopterygiopsis muelleriana* (Schimp.) Iwat.**

Dale H. Vitt - 12

***Eucladium verticillatum* (Musci) second Ontario station**

P. M. Eckel - 15

How to Make Thin Free-Hand Sections

Paul Wilson - 16

@ April, 1990, by the American Bryological and Lichenological Society

Editor:

Robert E. Magill
Department of Bryology
Missouri Botanical Garden
P.O. Box 299
St. Louis, MO 63166-0299
U.S.A.

ISSN 0747-9859

Evansia volume 6, number 3 was mailed on 4 December 1989

Delaware Mosses

Bruce Allen[1]

The state of Delaware occupies the northeast sector of the Delmarva peninsula. It is bounded on the east by the Delaware River, Delaware Bay and the Atlantic Ocean. Its southern boundary runs 34 miles due west from the Ocean in the latitude of 38° 27' W. The western boundary is a straight line running 81 miles northward from the western most point of the southern boundary. Its northern boundary is the periphery of a circle, with a radius of 12 miles from the center of the town of New Castle, running from the Mason-Dixon line to the Delaware River. Although it is nearly twice the size of Rhode Island, Delaware is the second smallest state in the Union; only Alaska, Wyoming, and Vermont have fewer people.

The state is divided into three counties: New Castle, Kent and Sussex. New Castle, the northernmost and smallest county contains a narrow strip of the Piedmont province in the north. Otherwise, the state lies completely in the Coastal Plain province.

In the following list, collections made by W. R. Buck (NY) were determined by him, those made by C. Reed were named by H. Robinson (US). Otherwise the species in the list, with the exception of Sphagnum (named by L. E. Anderson), have either been named or verified by me. Collections made by B. Allen or C. Reed are deposited in their personal herbaria. I thank the curators of DUKE, MO, NY, PAC, and PH for the loan of specimens.

AMBLYSTEGIACEAE

Amblystegium serpens (Hedw.) B.S.G. - **New Castle**: Carpenter State Park, Buck 17852 (NY).

A. varium (Hedw.) Lindb. - **New Castle**: Wilmington, Commons (PH); Greenbank, Commons (PH); N of Smyrna, Buck 17774 (NY).

Campylium chrysophyllum (Brid.) J. Lange - **New Castle**: Greenbank, Commons (PH); Mt. Cuba, Kaiser (DUKE); Newark, Conard (DUKE); Carpenter State Park, Buck 17865 (NY), Allen 8619. **Kent**: Killen Pond, Allen 8392.

C. hispidulum (Brid.) Mitt. - **New Castle**: Naaman's Creek, Commons (DUKE, PH). **Sussex**: Trap Pond, Allen 8312.

C. polygamum (B.S.G.) C. Jens. - **New Castle**: Newark, Commons (PH).

---

[1] Missouri Botanical Garden, P.O. Box 299, St. Louis Missouri, 63166-0299.

Drepanocladus aduncus (Hedw.) Warnst. - **Kent**: Killen Pond, Allen 7729.

Hygroamblystegium tenax (Hedw.) Jens. - **New Castle**: Naaman's Creek; Faulkland; Centreville; Wilmington; all Commons (PH), **Kent**: Killen Pond, Allen 7752, **Sussex**: Gumboro, Buck 17851 (NY).

Leptodictyum humile (P. Beauv.) Crum & Anderson - **New Castle**: Wilmington, Commons (PH).

L. riparium (Hedw.) Warnst. - **New Castle**: Naaman's Creek, Commons (PH); Newport, Commons (PH); Carpenter State Park, Allen 8622, **Kent**: Killen Pond, Allen 7727, **Sussex**: Woodland Beach, Commons (PH); Gumboro, Buck 17834 (NY).

Platylomella lescurii (Sull.) Andrews - **New Castle**: Wilmington, Commons (PH).

AULACOMNIACEAE

Aulacomnium heterostichum (Hedw.) B.S.G. - **New Castle**: Falkland, Commons (DUKE), **Sussex**: Ellendale State Forest, Buck 17777A (NY), Allen 8568.

A. palustre (Hedw.) Schwaegr. - **Kent**: Killen Pond, Allen 7777, **Sussex**: Trap Pond, Allen 8331; Gumboro, Buck 17849 (NY), Allen 8608.

BARTRAMIACEAE

Philonotis fontana (Hedw.) Brid. - **New Castle**: Faulkland, Commons (PH).

P. gracillima Angstr. - **New Castle**: Wilmington, Commons (PH).

BRACHYTHECIACEAE

Brachythecium acuminatum (Hedw.) Aust. var. *cyrtophylla* (Kindb.) Redf. ex Crum - **Sussex**: Trap Pond, Anderson 23609 (DUKE).

B. oxycladon (Brid.) Jaeg. & Sauerb. - **New Castle**: N of Smyrna, Buck 17771 (NY), Allen 8548; Carpenter State Park, Allen 8623.

B. plumosum (Hedw.) B.S.G. - **New Castle**: Naaman's Creek, Kaiser (DUKE); Newark, Iron Hill, Conard (DUKE); Greenbank, Commons (DUKE).

B. rutabulum (Hedw.) B.S.G. - **New Castle**: Carpenter State Park, Buck 17858 (NY), Allen 8626, **Sussex**: Gumboro, Buck 17837 (NY), Allen 8609.

Bryoandersonia illecebra (Hedw.) Robins. - **New Castle**: Faulkland, Commons (PH); Newark, Iron Hill, Commons (DUKE); Mt. Cuba, Reed 108334.

Brynia novae-angliae (Sull. & Lesq.) Grout - **Kent**: Killen Pond, Allen 8396.

Eurhynchium hians (Hedw.) Sande Lac. - **New Castle**: Wilmington, Allopake River, Commons (PH); Carpenter State Park, Buck 17855 (NY), Allen 8616, **Sussex**: Gumboro, Buck 17825 (NY), Allen 8614.

E. pulchellum (Hedw.) Jenn. - **New Castle**: Carpenter State Park, Buck 17862 (NY).

Homalotheciella subcapillata (Hedw.) Broth. - **New Castle**: Naaman's Creek; Wilmington; Greenbank; Richardson's Mill, all Commons (PH), **Sussex**: Laurel, Commons (PH); Trap Pond, Allen 7819; Ellendale State Forest, Buck 17798 (NY), Allen 8555.

Steerecleus serrulatus (Hedw.) Robins. - **New Castle**: Naaman's Creek, Kaiser (DUKE); Mount Cuba, Kaiser (DUKE); Newark, Iron Hill, Conard (DUKE); Wilmington, Commons (DUKE); Carpenter State Park, Buck 17860 (NY), Allen 8615, **Kent**: Killen Pond, Allen 7723, Anderson 23602 (DUKE), **Sussex**:

Trap Pond, Allen 7805; Ellendale State Forest, Buck 17794 (NY).

BRYACEAE

Bryum argenteum Hedw. - **Sussex**: Gumboro, Allen 8578.

B. caespiticium Hedw. - **New Castle**: Mt. Cuba, Reed 108322, **Sussex**: Gumboro, Buck 17829 (NY).

B. capillare Hedw. - **Sussex**: Gumboro, Buck 17841 (NY).

B. reedii Robinson - **New Castle**: Mt. Cuba, Reed 72024 (US).

B. rubens Mitt. - **New Castle**: Carpenter State Park, Buck 17856 (NY).

B. pseudotriquetrum (Hedw.) Gaertn. et al. - **Kent**: Killen Pond, Allen 8398.

Leptobryum pyriforme (Hedw.) Wils. - **New Castle**: Richardson's Mill, Wilmington; Greenbank, all Commons (PH).

Pohlia nutans (Hedw.) Lindb. - **New Castle**: Wilmington, Commons (DUKE); Mt. Cuba, Reed 108319, 108321, 108325.

Rhodobryum ontariense (Kindb.) Kindb. - **Sussex**: Ellendale State Forest, Buck 17799 (NY).

BUXBAUMIACEAE

Diphyscium foliosum (Hedw.) Mohr - **New Castle**: Wilmington; Naaman's Creek, Common (PH); Greenbank, Commons (PH); Mt Cuba, Reed 108320.

CLIMACIACEAE

Climacium americanum Brid. - **Kent**: Killen Pond, Allen 7719, **Sussex**: Trap Pond, Allen 4820.

CRYPHAEACEAE

Cryphaea glomerata B.S.G. ex Sull. - **Sussex**: Trap Pond, Allen 8350.

DICRANACEAE

Bruchia flexuosa (Sw. ex Schwaegr.) C. Müll. - **New Castle**: Mt. Cuba, Commons (PH).

Campylopus tallulensis (Sull. ex Lesq.) Sull. - **Sussex**: Trap Pond, Allen 8345.

Dicranella heteromalla (Hedw.) Schimp. - **New Castle**: Newark, Iron Hill, Conard (DUKE); N of Smyrna, Allen 8546; Mt. Cuba, Reed 72081, 72082, 10833, **Kent**: Killen Pond, Allen 7757, **Sussex**: Trap Pond, Allen 8342; Ellendale State Forest, Buck 17807 (NY).

D. varia (Hedw.) Schimp. - **New Castle**: Richard's Mill, Wilmington, Commons (DUKE, PAC).

Dicranum condensatum Hedw. - **New Castle**: Glasgow, Commons (PH), **Kent**: Killen Pond, Allen 8385, **Sussex**: Laurel, Commons (PH); Trap Pond, Allen 8339.

D. flagellare Hedw. - **New Castle**: Ruthby, Commons (DUKE, PH); Newark, Iron Hill, Conard (DUKE), **Kent**: Killen Pond, Allen 7730; Anderson 23603 (MO), **Sussex**: Ellendale, Commons (PH), Trap Pond, Allen 7809; Ellendale State Forest, Buck 17785 (NY); Gumboro, Buck 17824 (NY), Allen 8582.

D. montanum Hedw. - **Sussex**: Ellendale State Forest, Buck 17801 (NY).

D. scoparium Hedw. - **New Castle**: Townsend, Commons (P); Wilmington, Commons (MO, PH); Newark, Iron Hill, Conard (DUKE); Mt. Cuba, Reed 72077, 10827, **Kent**: Killen Pond, Allen 7720, **Sussex**: Trap Pond, Allen 7793, Bethany Beach, Jennings (MO); Ellendale State Forest, Buck 17786 (NY); Gumboro, Buck 17813 (NY).

Leucobryum albidum (Brid. ex P.-Beauv.) Lindb. - **Sussex**: Ellendale State Forest, Allen 8570.

L. glaucum (Hedw.) Aongstr. ex Fries - **New Castle**: Wilmington, Commons (DUKE); Mt. Cuba, Reed 108328, **Kent**: Killen Pond, Allen 7749, **Sussex**: Trap Pond, Allen 7802.

DITRICHACEAE

Ceratodon purpureus (Hedw.) Brid. - **New Castle**: N of Smyrna, Allen 8541, **Kent**: Killen Pond, Allen 8364, **Sussex**: Trap Pond, Allen 7797; Gumboro Allen 8589.

Ditrichum lineare (Sw.) Lindb. - **New Castle**: Wilmington, Commons (PH); E of Mt. Cuba, Reed 72072.

D. pallidum (Hedw.) Hampe - **New Castle**: Mt. Cuba; Elsmere; Faulkland, all Commons (PH); Naaman's Creek, Commons (MO), **Kent**: Smyrna, Commons (PH).

D. pusillum (Hedw.) Hampe - **New Castle**: Faulkland, Commons (PH); E of Mt. Cuba, Reed 72079.

Pleuridium palustre (Bruch & Schimp.) B.S.G. - **New Castle**: Wilmington, Commons (DUKE).

P. subulatum (Hedw.) Rabenh. - **New Castle**: Wilmington, Commons (DUKE).

ENTODONTACEAE

Entodon seductrix (Hedw.) C. Müll. - **New Castle**: Townsend; Wilmington, all Commons (PH); N of Smyrna, Buck 17767 (NY); Mt. Cuba, Reed 72078, **Kent**: Killen Pond, Allen 7771, **Sussex**: Laurel, Commons (PH); Trap Pond, Allen 7813; Gumboro, Buck 17843 (NY), Allen 8601.

FISSIDENTACEAE

Fissidens adianthoides Hedw. - **New Castle**: Wilmington, Commons (PH).

F. bryoides Hedw. - **New Castle**: Wilmington, Commons (PH).

F. bushii (Card. & Thér.) Card. & Thér. - **New Castle**: Wilmington, Commons (PH).

F. dubius P.-Beauv. - **New Castle**: Wilmington, Commons (PH), **Sussex**: Ellendale State Forest, Buck 17796 (NY).

F. fontanus (B.-Pyl.) Steud. - **New Castle**: Naaman's Creek, Commons (PH), **Kent**: Killen Pond, Allen 7781.

F. taxifolius Hedw. - **New Castle**: Greenbank, Commons (PH); Carpenter State Park, Buck 17861 (NY).

FONTINALACEAE

Dichelyma capillaceum (With.) Myr. - **New Castle**: Townsend, Commons (PH).

Fontinalis novae-angliae Sull. - **New Castle**: Upper Allopokus Run, Wilmington, Commons (PH), **Kent**: Killen Pond, Allen 8405, **Sussex**: Trap Pond, Allen 7803.

F. sullivantii Lindb. - **New Castle**: Townsend, Commons (PH); Naaman's Creek, Gadsby (PH).

FORSSTROEMIACEAE

Forsstroemia trichomitria (Hedw.) Lindb. - **New Castle**: Wilmington, Shellpot Creek;

Farnhurst, all Commons (PH); Naaman's Creek, Commons (DUKE, PH).

FUNARIACEAE

Funaria flavicans Michx. - **New Castle**: Elsmere; Centreville; Wilmington, all Commons (PH).

F. hygrometrica Hedw. - **Kent**: Smyrna, Commons (PH).

Physcomitrium immersum Sull. - **New Castle**: Wilmington, Commons 33 (NY).

P. pyriforme (Hedw.) Hampe - **New Castle**: Wilmington, Commons (DUKE, PH).

GRIMMIACEAE

Grimmia olneyi Sull. - **New Castle**: Wilmington, Commons (PH).

G. pilifera P.-Beauv. - **New Castle**: Wilmington; Allopakus Run, Wilmington; Naaman's Creek, all Commons (PH).

HEDWIGIACEAE

Hedwigia ciliata (Hedw.) P.-Beauv. - **New Castle**: Greenbank, Commons (PH); Faulkland, Commons (DUKE).

HYPNACEAE

Callicladium haldanianum (Grev.) Crum - **New Castle**: Mt. Cuba, Reed 108331.

Ctendium malacodes Hedw. - **New Castle**: Mt. Cuba, Reed 108337.

Herzogiella striatella (Brid.) Iwats. - **New Castle**: Newark, Iron Hill, Conard (DUKE), **Sussex**: Gumboro, Allen 8598.

Homomallium adnatum (Hedw.) Broth. - **New Castle**: Naaman's Creek, Commons (DUKE, PH); Mt. Cuba, Gadsby.

Hypnum curvifolium Hedw. - **New Castle**: Ruthby; Newark, Commons (PH).

H. fertile Sendt. - **New Castle**: Naaman's Creek, Wilmington, Commons (PH), **Kent**: Killen Pond, Allen 7732, **Sussex**: Gumboro, Allen 8593.

H. imponens Hedw. - **New Castle**: Mt. Cuba; Wilmington, all Commons (PH); Newark, Iron Hills, Conard (DUKE); Mt. Cuba, Reed 108326, 108336, **Kent**: Killen Pond, Allen 7768, **Sussex**: Laurel, Commons (PH); Trap Pond, Allen 7798; Gumboro, Buck 17815 (NY), Allen 8580.

H. lindbergii Mitt. - **New Castle**: Newark, Greenbank, Commons (PH); Naaman's Creek, Kaiser (DUKE); N of Smyrna Buck 17770 (NY); Carpenter State Park, Buck 17853 (NY), Allen 8627, **Sussex**: Trap Pond, Allen 8338.

H. pallescens (Hedw.) P.-Beauv. - **Kent**: Killen Pond, Allen 8363.

H. pratense Koch ex Spruce - **New Castle**: Shellpot Creek, Commons (PH).

Isopterygium tenerum (Sw.) Mitt. - **New Castle**: Farnhurst, Commons (PH), **Kent**: Killen Pond, Allen 7724, Anderson 23595 (DUKE), **Sussex**: Trap Pond, Allen 8330; Gumboro, Buck 17830 (NY), Allen 8607.

Platygyrium repens (Brid.) B.S.G. - **New Castle**: Newark, Conard (DUKE); Wilmington, Commons (DUKE); N of Symrna, Buck 17773 (NY), Allen 8542, **Kent**: Killen Pond, Allen 8389, **Sussex**: Ellendale State Forest, Buck 17811 (NY), Allen 8558; Gumboro, Allen 8577.

Pylaisiadelpha tenuirostre (Bruch & Schimp. ex Sull.) Buck - **New Castle**: N of Smyrna, Allen 8540, **Kent**: Killen Pond, Allen 8394.

Pylaisiella selwynii (Kindb.) Crum, Steere & Anders. - **New Castle**: Ashland, Kaiser

(DUKE); Mt. Cuba, Reed 108323.

LESKEACEAE

Leskea australis Sharp - **Sussex**: Trap Pond, Anderson 23608 (DUKE).

L. gracilescens Hedw. - **New Castle**: Greenbank; Newark; Faulkland, all Commons (PH), **Kent**: Killen Pond, Allen 7738, **Sussex**: Gumboro, Allen 8594.

L. obscura Hedw. - **New Castle**: Newark, Commons (DUKE, PH); Townsend; Greenbank; Faulkland, all Commons (PH); Ruthby, Commons (PAC), **Kent**: Killen Pond, Allen 7787.

L. polycarpa Hedw. - **Kent**: Smyrna, Commons (DUKE, PAC).

Lindbergia brachyptera (Mitt.) Kindb. - **Kent**: Killen Pond, Allen 8406.

LEUCODONTACEAE

Leucodon julaceus (Hedw.) Sull. - **Kent**: Killen Pond, Allen 7772, **Sussex**: Trap Pond, Allen 7794; Laurel, Commons (DUKE); Ellendale State Forest, Buck 17789 (NY).

MNIACEAE

Mnium hornum Hedw. - **Kent**: Killen Pond, Allen 7770.

Plagiomnium affine (Bland. ex Funck) T. Kop. - **Kent**: Killen Pond, Allen 8404B.

P. ciliare (C. Müll.) T. Kop. - **New Castle**: Newark, Iron Hill, Conard (DUKE).

P. cuspidatum (Hedw.) T. Kop. - **New Castle**: Newark, Iron Hill, Conard (DUKE); Carpenter State Park, Buck 17866 (NY); Mt. Cuba, Reed 108336, **Kent**: Killen Pond, Allen 7782, **Sussex**: Trap Pond, Allen 8360; Ellendale State Forest, Buck 17800 (NY), Allen 8565.

Rhizomnium punctatum (Hedw.) T. Kop. - **Kent**: Killen Pond, Allen 8404.

ORTHOTRICHACEAE

Drummondia prorepens (Brid.) Britt. - **New Castle**: Wilmington, Commons (PH); Allopakus River, Wilmington, Commons (DUKE, PAC).

Orthotrichum ohioense Sull. & Lesq. ex Aust. - **New Castle**: Richardson's Mill, Wilmington, Commons (NY), **Sussex**: Gumboro, Allen 8601B.

Orthotrichum stellatum Brid. - **New Castle**: Wilmington, Commons (PH); N of Smyrna, Buck 17768 (NY), **Kent**: Killen Pond, Allen 7779, **Sussex**: Trap Pond, Allen 8352.

Ulota crispa (Hedw.) Brid. - **New Castle**: Wilmington, Commons (PH).

U. hutchinsiae (Sm.) Hamm. - **New Castle**: Allopakus River, Wilmington, Commons (DUKE).

PLAGIOTHECIACEAE

Plagiothecium cavifolium (Brid.) Iwats. - **Kent**: Killen Pond, Allen 7759; Anderson 23603 (DUKE, MO), **Sussex**: Trap Pond, Allen 8334; Ellendale State Forest, Allen 8554.

P. denticulatum (Hedw.) B.S.G. - **New Castle**: Ruthby, Commons (DUKE), **Kent**: Killen Pond, Allen 8382.

POLYTRICHACEAE

Atrichum angustatum (Brid.) BSG - **New Castle**: Newark, Iron Hill, Conard (DUKE); Carpenter State Park, Buck 17857 (NY), Allen 8618; N of Smyrna, Allen 8539, **Kent**: Killen Pond, Allen 7745, **Sussex**: Trap Pond, Allen 7790; Russum Pond, Anderson 23610 (MO); Ellendale State Forest, Buck 17793 (NY); Gumboro, Allen 8591.

A. crispum (James) Sull. - **Sussex**: Trap Pond, Allen 7804; Russum Pond, Anderson 23610 (DUKE); Ellendale State Forest, Buck 17804 (NY); Gumboro, Buck 17836 (NY).

A. oerstedianum (C. Müll.) Mitt. - **New Castle**: Carpenter State Park, Buck 17864 (NY).

A. undulatum (Hedw.) P.-Beauv. var. *altecristatum* - **New Castle**: N of Smyrna, Allen 8549, **Kent**: Killen Pond, Allen 8365.

var. *attenuatum* B.S.G. - **New Castle**: Carpenter State Park, Allen 8620.

Polytrichastrum ohioense (Ren. & Card.) G. L. Smith - **New Castle**: Vandyke, Long 1915 (DUKE); Newark, Iron Hill, Conard (DUKE); N of Smyrna, Allen 8547, **Kent**: Killen Pond, Allen 8386, **Sussex**: Ellendale State Forest, Buck 17808 (NY), Allen 8564.

Polytrichum commune Hedw. var. *perigoniale* (Michx.) Hampe - **Sussex**: Trap Pond, Allen 7795; Gumboro, Buck 17834 (NY), Allen 8590.

P. juniperinum Hedw. - **New Castle**: Mt. Cuba, Reed 85471, **Sussex**: Trap Pond, Allen 8340.

Pogonatum pensilvanicum (Hedw.) P.-Beauv. - **New Castle**: Faulkland, Commons (DUKE).

POTTIACEAE

Barbula unguiculata Hedw. - **New Castle**: N of Smyrna, Buck 17775, Allen 8544.

Tortella humilis (Hedw.) Jenn. - **Sussex**: Trap Pond, Allen 8314; Ellendale State Forest, Buck 17777 (NY); Gumboro, Buck 17822 (NY).

Tortula pagorum (Milde) De Not. - **Kent**: Killen Pond, Allen 7733.

Weissia controversa Hedw. - **New Castle**: Carpenter State Park, Buck 17863 (NY); Mt. Cuba, Commons (PH, Reed).

PTYCHOMITRIACEAE

Ptychomitrium drummondii (Wils.) Sull. - **Sussex**: Milton, Smith (DUKE).

P. incurvum (Schwaegr.) Spruce - **New Castle**: Faulklands, Commons (NY); Wilmington, Commons (NY).

SEMATOPHYLLACEAE

Brotherella recurvans (Michx.) Fleisch. - **Kent**: Killen Pond, Allen 8362.

Sematophyllum adnatum (Michx.) Britt. - **New Castle**: N of Smyrna, Buck 17772 (NY), **Kent**: Killen Pond, Allen 8387, **Sussex**: Trap Pond, Allen 7812; Ellendale State Forest, Buck 17780; Gumboro, Buck 17826 (NY), Allen 8603.

S. demissum (Wils.) Mitt. - **New Castle**: Mount Cuba, Kaiser (DUKE).

SPHAGNACEAE

Sphagnum affine Ren. & Card. - **Kent**: Killen Pond, Allen 8375, **Sussex**: Trap Pond, Allen 8335.

S. bartlettianum Warnst. - **Kent**: Killen Pond, Allen 8384.

S. cuspidatum Ehrh. - **Sussex**: Gumboro, Allen 8606.

S. henryense Warnst. - **Kent**: Killen Pond, Allen 8371, **Sussex**: Gumboro, Allen 8604, 8605, 8612.

S. lescurii Sull. - **Kent**: Killen Pond, Allen 8400, **Sussex**: Trap Pond, Allen 8328; Gumboro, Allen 8610, 8613.

S. magellanicum Brid. - **Kent**: Killen Pond, Allen 8378.

S. palustre L. - **Kent**: Killen Pond, Allen 7743, Anderson 23619 (DUKE), **Sussex**: Ellendale State Forest, Allen 8557, 8574.

S. recurvum P.-Beauv. - **Kent**: Killen Pond, Anderson 23621 (DUKE), Allen 8374, **Sussex**: Trap Pond, Allen 4818.

S. tenerum Sull & Lesq. - **Sussex**: Ellendale State Forest, Allen 8569.

THELIACEAE

Thelia asprella Sull. - **New Castle**: Allopokas Run, Wilmington, Commons (PH).

T. hirtella (Hedw.) Sull. - **New Castle**: Wilmington, Commons (DUKE); N of Smyrna, Buck 17766 (NY), **Kent**: Killen Pond, Allen 7776, Anderson 23597 (DUKE), **Sussex**: Trap Pond, Allen 7789; Ellendale State Forest, Buck 17778 (NY), Allen 8566; Gumboro, Buck 17847 (NY).

TETRAPHIDACEAE

Tetraphis pellucida Hedw. - **Kent**: Killen Pond, Allen 8395, **Sussex**: Gumboro, Allen 8583.

THUIDIACEAE

Anomodon attenuatus (Hedw.) Hüb. - **New Castle**: Naaman's Creek, Commons (DUKE), **Kent**: Killen Pond, Allen 7747, **Sussex**: Trap Pond, Allen 7796; Ellendale State Forest, Allen 8561; Gumboro, Buck 17840 (NY).

A. rostratus (Hedw.) Schimp. - **New Castle**: Kirkwood, Commons (DUKE); Mt. Cuba, Kaiser (DUKE), **Kent**: Killen Pond, Allen 7742, Anderson 23601 (DUKE), **Sussex**: Ellendale State Forest, Buck 17803 (NY); Gumboro, Allen 8576.

Bryohaplocladium microphyllum (Hedw.) Wat. & Iwats. - **Kent**: Killen Pond, Allen 8388.

Haplohymenium triste (Ces. ex De Not.) Kindb. - **New Castle**: Allopakus River; Shellpot Creek; Carrcroft Station; Wilmington, all Commons (PH); Naaman's Creek, Commons, (NY, PH), **Sussex**: Trap Pond, Allen 8353; Ellendale State Forest, Buck 17782 (NY), Allen 8556.

Helodium paludosum (Sull.) Aust. - **New Castle**: Newark; Wilmington, all Commons (PH); Carpenter State Park, Buck 17852 (NY), Allen 8624.

Thuidium allenii Aust. - **Kent**: Killen Pond, Allen 7785, **Sussex**: Trap Pond, Allen 8332.

T. delicatulum (Hedw.) B.S.G. - **New Castle**: Newark, Iron Hill, Conard (DUKE); Newark, White Clay Creek, Conard (DUKE); Mt. Cuba, Reed 108324, **Kent**: Killen Pond, Anderson 23596 (DUKE), Allen 8373, **Sussex**: Trap Pond, Allen 8349; Ellendale State Forest, Buck 17776 (NY); Gumboro, Buck 17818 (NY).

T. scitum (P.-Beauv.) Aust. - **Kent**: Killen Pond, Allen 7773.

Should mosses have common names? Part 3. The Common Names of the Primitive Orders

Janice M. Glime[1] & Zen Iwatsuki[2]

Although many of the more primitive mosses discussed in this issue are either small or uncommon, a surprising number have common names. Included here are the Andreaeales, Archidiales, Fissidentales, Bryoxiphiales, and Schistostegales. One reason for the abundance of names is that these mosses represent unusual and distinctive mosses, such as the blackish *Andreaea*, the feather-like *Fissidens*, the small soil-dwelling *Archidium*, the highly distinctive *Bryoxiphium* that has reminded the Japanese of a shrimp, and the luminous *Schistostega*.

This availability of names is in spite of the fact that only *Fissidens* out of this group seems to have had any sort of economic importance. The Chinese have used it as an antibiotic to cure a swollen throat (Ding 1982), although no scientific evidence is available to support this use. *Fissidens* serves another medical use in China by serving as host for the aphid that is responsible for the Chinese gallnut so widely used as both a food and a medicine (Tang 1976).

Unlike the North Americans, who have avoided common names, the Japanese and Chinese have created names for every taxon. Many of these are literal translations of the Latin names, but many provide interesting mental images of the moss they describe, such as the shrimp moss (*Bryoxiphium norvegicum*) or royal fern moss (*Fissidens osmundioides*). Others require explanation to be understood in the western world. For example, the Chinese phoenix moss refers to a large bird with a beautiful long tail, referring to the feather-like shape of *Fissidens*.

Schistostega pennata has names that refer to its cave-dwelling habit and its capability of reflecting small quantities of light in a way that make it appear to be luminous. The Japanese have a monument to this moss in Hokkaido, and a Japanese opera has been based on folklore involving the glow the moss made behind the head of a

---

[1] Department of Biological Sciences, Michigan Technological University, Houghton, Michigan 49931

[2] Botanical Institute, Faculty of Science, Hiroshima University, Higashi-Senda-Machi, Hiroshima 730, Hiroshima, Japan

fisherman who had taken shelter with his starving shipmates in a cave.

Some names seem to represent conflicting interpretations of the same moss. For example, in North America, *Andreaea nivalis* was named red rock moss, whereas in Japan it was named a black moss.

Conventions in formatting follow Glime (1989). Beginning with this list the nomenclature will follow that being prepared by Howard Crum and Louis Anderson for a new North American checklist. We thank Howard Crum for permission to use it and Diana Horton for a copy of the names on disk.

Andreaea: (for Andreae of Germany)[9]; rock mosses[2]; split moss[8]; kurogoke = black moss[13]; black moss[14]
Andreaea blyttii Schimp.: Blytt's black moss[14]
Andreaea crassinervia Bruch: thick-nerved rock moss[11]
Andreaea nivalis Hook.: red rock moss[5]; tall slender split moss[8]; snow moss[11]; Gassan kurogoke = Mt. Gassan black moss[13]
Andreaea rothii Web. & Mohr: black falcate split moss[8]; black falcate andreaea[20]
Andreaea rupestris Hedw.: rock andreaea[4]; black rock moss[5]; rock split moss[8]; black mountain moss[11]; kurogoke = black moss[13]
Andreaeobryum: no names found
Archidium: tsuchi-goke = soil (or earth) moss[13]
Archidium alternifolium (Hedw.) Schimp.: clay moss[11]
Archidium ohioense Schimp. ex C. Muell.: Tokyo soil moss[13]
Fissidens: (split tooth, referring to the peristome)[9]; plume mosses[2]; flat fork mosses[7]; Chinese phoenix moss[13]; plume moss, split-leaf moss[16]; split-toothed mosses[17]
Fissidens adianthoides Hedw.: maiden hair moss[2]; adiantum-like fork moss[8]; fern-like flat moss[11]; shiny beak Chinese phoenix moss[13]; maiden-hair split-toothed moss[17]
Fissidens bryoides Hedw.: common flat fork moss[7]; lesser pennate-leaved fork moss[8]; common flat moss[11]; Hokkaido Chinese phoenix moss, child Chinese phoenix moss[13]; small split-toothed moss[17]; common flat fork-moss[20]
Fissidens exilis Hedw.: slender flat moss[11]
Fissidens grandifrons Brid.: narrow-leafed Chinese phoenix moss[13]
Fissidens hyalinus Wils. & Hook.: Satsuma Chinese phoenix moss (Satsuma is a place in Japan)[13]
Fissidens microcladus Thwaites & Mitt.: Garber Chinese phoenix moss[13]
Fissidens osmundoides Hedw.: alpine flat moss[11]; royal fern moss[13]
Fissidens taxifolius Hedw.: yew-leaved fork moss[7]; yew-like fork moss[8]; yew-leaved flat moss[11]; yew-leafed moss[13]; yew-leaved split-toothed moss[17]; yew-leaved flat fork-moss[20]
Bryoxiphium norvegicum (Brid.) Mitt.: sword moss[1, 6, 10]; shrimp moss[13]

Schistostega pennata (Hedw.) Web. & Mohr: luminous moss[1, 3, 4, 13]; feather cavern moss[8]; cave moss, goblin gold[10]; shining moss, cavern moss[11]

---

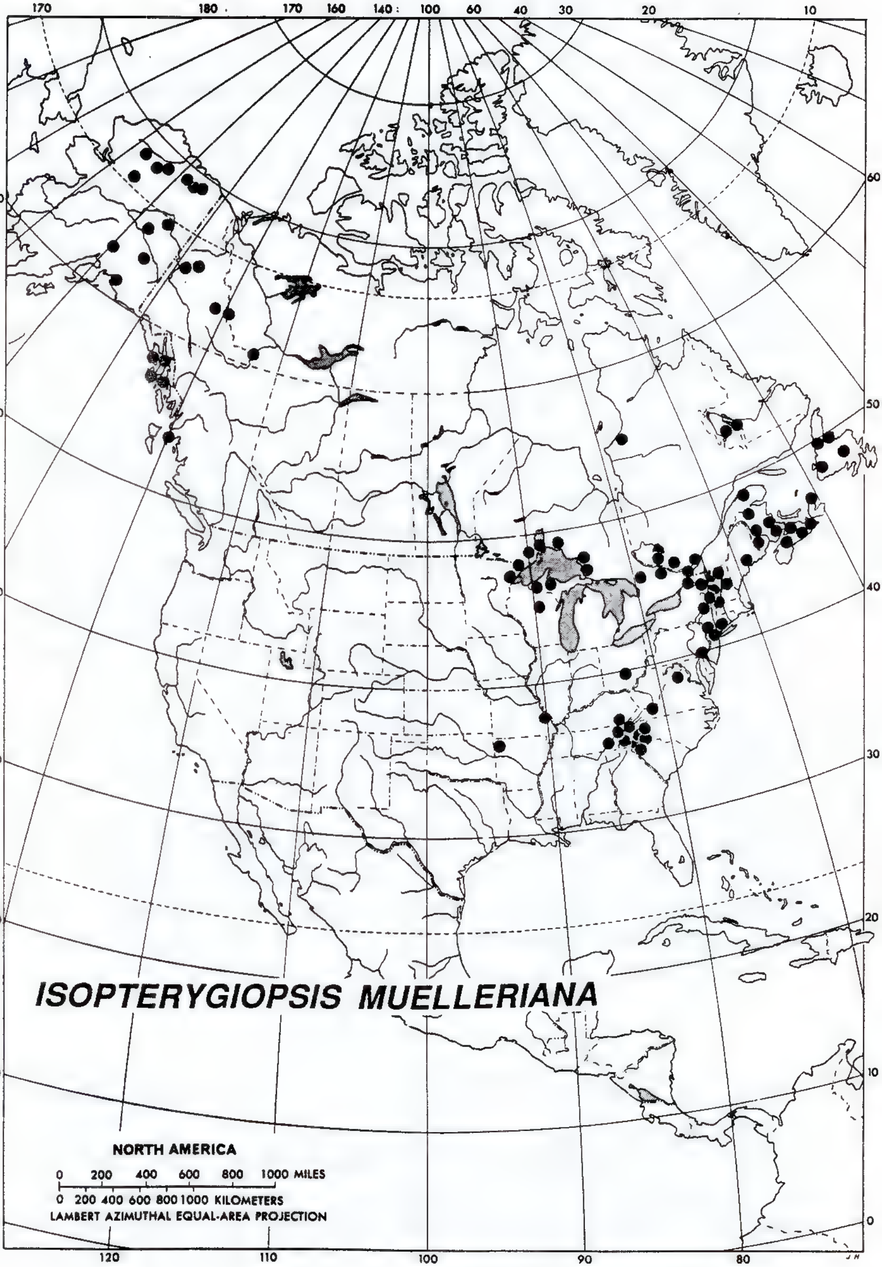
[1] Grout, A. J. 1903. *Mosses with a handlens and Microscope.* By Author. New York.
[2] Bland, J. 1971. *Forests of Lilliput*. Prentice-Hall, Inc., Englewood Cliffs. 210 Pp.
[3] Shuttleworth, F. S. and H. S. Zim. 1967. *Non-flowering plants. Ferns, mosses, lichens, mushrooms and other fungi*. A Golden Nature Guide, Golden Press, N.Y. 160 Pp.
[4] Marshall, N. L. 1907. *Mosses and lichens*. Doubleday, Page, & Co., N. Y. 327 Pp.
[5] Harthill, M. P. and I. O'Connor. 1975. *Common mosses of the Pacific coast.* Naturegraph.
[6] Welch, W. H. 1957. *Mosses of Indiana*. An illustrated manual. The Bookwalter Company, Indianapolis. 478 Pp.
[7] Jewell, A. L. 1955. *The observer's book of mosses and liverworts*. Frederick Warne and Co. Ltd., N. Y.
[8] Stark, R. M. 1860. *A popular history of British mosses, 2nd edition*. Routledge, Warne, & Routledge, London (Wheldon & Wesley), 348 Pp.
[9] Dunham, E. M. 1951. *How to know the mosses*. The Mosher Press, Boston.
[10] Crum, H. 1976. *Mosses of the Great Lakes forest, revised edition*. Univ. Mich. 10: 1-404.
[11] Tripp, F. E. 1888. *British mosses, their homes, aspects, structure and uses*. George Bell & Sons, Covent Garden, London (Wheldon & Wesley), 2 Vol.
[13] Dr. Zen Iwatsuki (personal communication)
[14] Jinkun Zhang (personal communication)
[16] Thomas, L. P. and J. R. Jackson. 1985. *Walk softly upon the earth. A pictorial guide to Missouri mosses, liverworts and lichens*. Missouri Department of Conservation, Jefferson City, 129 pp.
[17] Britton, E. G. 1900. *Mosses*. Nature Study Leaflets, Natural Science Committee of the Associate Alumnae of the Normal College, New York City 4: 1-9.
[20] Russell, T. H. 1910. *Mosses and liverworts. An introduction to their study, with hints as to their collection and preservation*. Sampson Low, Marston & Co., LD. 211 Pp., 10 plates.

Literature cited

Glime, J. M. 1989. Should mosses have common names? *Evansia* 6(1):1-6.

Ding, H. 1982. *Medicinal spore-bearing plants of China*. 409 Pp. Shanghai.

Tang, C. 1976. The Chinese gallnuts, their multiplication and means for increasing production. *Acta Entomol. Sinica* 19: 282-296.


ISOPTERYGIOPSIS MUELLERIANA
NORTH AMERICA
0 200 400 600 800 1000 MILES
0 200 400 600 800 1000 KILOMETERS
LAMBERT AZIMUTHAL EQUAL-AREA PROJECTION
170
180
170
160
140
100
60
40
30
20
10
60
50
40
30
20
10
0
120
110
100
90
80
J H

The Distribution of North American Bryophytes *Isopterygiopsis muelleriana* (Schimp.) Iwat.

Dale H. Vitt[1]

Isopterygiopsis muelleriana has been placed in the Plagiotheciaceae (Vitt 1984, Ireland et al. 1987) or in the Hypnaceae (Crum & Anderson (1981). This species is differentiated by a complanate arrangement of leaves and shiny yellow-green color. The leaves are not at all secund as in *Isopterygium pulchellum*. Rather, each leaf cups the one above, somewhat like that in *Fissidens*. The stems possess a hyalodermis, and no differentiated alar cells are present. Crum & Anderson (1981) nicely describe the leaves as rigidly distichous-complanate and usually crowded and pectinate in arrangement. At least in the west, the species occurs only on acidic substrates. In these situations, it is found on thin soil in small crevices of rock outcrops. Often it occurs with Arctoa fulvella, *Amphidium mougeotii, Cynodontium tenellum, Rhabdoweisia crispata*, and *Grimmia torquata*.

Previously, Vitt & Horton (1979) have mapped its distribution in North America. Further details on its relationships, world distribution, and differentiation from other species are present in Ireland (1969), Iwatsuki (1970), and Ochyra (1976).

The North American distribution of *Isopterygiopsis muelleriana* is notably bicentric. In the east, it has been found from Newfoundland and southern Labrador, west to the east coast of Hudson Bay and southward to Lake Superior, Wisconsin, Ohio, and the southern Appalachians of the Carolinas and Tennessee. Probably disjunct in southeastern Missouri and northwestern Arkansas. It should be looked for in southern Illinois and perhaps in eastern Arizona. In the west, it occurs from northern Alaska, south into the Yukon Territory, with one station in extreme southwestern Northwest Territories, and several in the Alaskan Panhandle. The locality near Prince Rupert, British Columbia is as far south as it has been reported and is the only area from the Canadian west coast from which the species has been collected. It is probably more common along the British Columbia coast than presently indicated by known collections.

---

[1] Department of Botany, The University of Alberta, Edmonton, Alberta, Canada, T6G 2E9.

This bicentric distribution pattern appears to reflect two centers from which dispersal took place after the last glaciation. The western populations presently occur in and around unglaciated Beringia, whereas the eastern populations are mostly confined to areas south of the maximum extent of Wisconsinan glaciation. In the east, migration northward onto the Canadian shield is evident, or it is possible that some of these populations may have survived in refugia north of the southern glacial margin. Thus, this species is typical of those that seem to have survived the last glaciation in two centers, one north of the glaciers and one south of it. Seemingly, habitat availability in the east (acidic substrates) allowed more extensive northward migration during the last 10,000 years or so, whereas in the west predominantly calcareous substrates, drier environments, and rugged terrain limited dispersal.

Additional reports, new collections, and range extensions should be sent to the author. These new findings can be reported in future editions of this series.
NEXT SPECIES: *Seligeria donniana* (Sm.) C. Müll.

LITERATURE CITED

Crum, H.A. and L.E. Anderson. 1981. *Mosses of Eastern North America*, Vols. 1 & 2. Columbia University Press, New York. 1328 pp.

Ireland, R.R. 1969. A taxonomic revision of the genus Plagiothecium for North America, north of Mexico. *Nat. Mus. Canada, Publ. Bot.* 1: 1-118.

--------, G.R. Brassard, W.B. Schofield and D.H. Vitt. 1987. Checklist of the mosses of Canada II. *Lindbergia* 13: 1-62.

Iwatsuki, Z. 1970. A revision of Plagiothecium and its related genera from Japan and her adjacent areas, I. *Jour. Hattori Bot. Lab.* 33: 331-80.

Ochyra, R. 1976. Taxonomic position and geographical distribution of Isopterygiopsis muelleriana (Schimp.) Iwats. *Fragmenta Florist. Geobot.* 22: 129-135.

Vitt, D.H. 1984. Classification of the Bryopsida, pp. 696-759. In: Schuster, R.M. (ed.), *New Manual of Bryology*. Hattori Bot. Lab., Nichinan.

--------, and D.G. Horton. 1979. Mosses of the Nahanni and Liard ranges area, southwestern Northwest Territories. *Can. Jour. Bot.* 57: 269-283.

Eucladium verticillatum (Musci) second Ontario station

P. M. Eckel[1]

The first collections of the moss *Eucladium verticillatum* (Brid.) B.S.G. for Ontario were made by C.E. Garton (CANM!) from the Thunder Bay District, Sibley Peninsula, Nos. 2984 & 4310.

The present collections represent the known northeastern range limits of the species, which has its major expression in west to southwestern areas of North America (although there is a literature report for the Northwest Territories by Ireland, et al., 1987). Brassard (1983) has excluded the species from the Newfoundland flora. *Eucladium verticillatum* is often confused with *Hymenostylium recurvirostrum* (Hedw.) Dix., which is more frequent in similar habitats, often growing mixed with *Didymodon tophaceus*. Extensive exposures of seepy limestone-dolomite strata along the Niagara escarpment in Ontario and New York State (where the species has not yet been reported) should support additional populations of *E. verticillatum*. I would like to thank R. H. Zander for verifying these specimens.

Eucladium verticillatum (Brid.) B.S.G. - Canada, Ontario, Regional Municipality of Niagara, City of Niagara Falls; dolomite limestone gorge with limestone, sandstone and shale interbeds, western slope with shade in the late afternoon:

a) Niagara Glen (Foster's Flats), base of gorge of the Niagara River; a) Rich bottomland forest area. In seepage, on and sheltered by calcareous ledges, associated taxa: *Fissidens grandifrons, Cratoneuron filicinum, Didymodon tophaceus*, P. M. Eckel, 19 February 1983, No. NF5 (BUF, CANM), No. NF12 (BUF).

b) base of dolomite caprock, just S of the whirlpool of the Niagara River, exposed face of sheer dolomite in sheet-seepage, associated taxa: *Parthenocissus quinquefolia, Amblystegium tenax, Didymodon tophaceus, Gymnostomum aeruginosum*; P. M. Eckel, 2 May 1987, No. 8706231 (BUF).

LITERATURE CITED

Ireland, R. R., G. R. Brassard, W. B. Schofield & D. H. Vitt. 1987. Checklist of the Mosses of Canada, II. *Lindbergia*. Vol. 13: 1-62.
Brassard, G.R. 1983. Checklist of the Mosses of the Island of Newfoundland, Canada, *Bryologist* 86: 54-63.

---

[1] Clinton Herbarium, Buffalo Museum of Science, Buffalo, New York, 14211.

How to Make Thin Free-Hand Sections

Paul Wilson[1]

For the study of bryophytes, turning whole plants into slices is a valuable skill. Floras regularly refer to structures that can be seen well only in section, and, at a more fundamental level, if one doesn't make good sections, one is missing an entire realm of structural delight. Although not everyone agrees, I believe the best technique for producing cross sections of leaves and stems is what I call the roll- and-chop method. This can be done with very little effort once one gets the knack. Some people seem to learn immediately. Others find that they must invest in an initiation period.

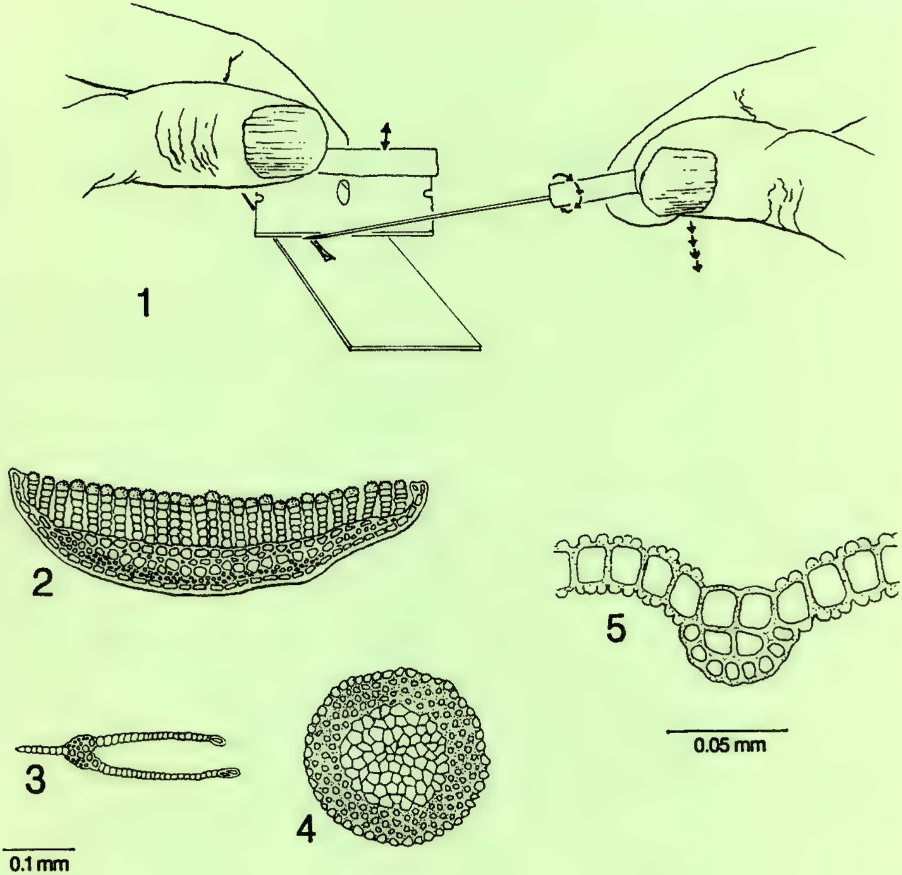
Figure 1 illustrates the technique. It is normally done while looking through a dissecting microscope. To make a slice of a leaf, pull the leaf off the plant, hold it under a dissecting needle, roll the needle back a tiny bit at a time, and after each roll cut down with a razor blade abutted against the needle. If it is not important exactly where the section comes from, then several leaves can be cut up at once, and, by the law of averages, a good section will be obtained with less care. Whole shoots can also be held down, rolled, and copped to yield sections of stems and leaves.

The products of a few such exercises are depicted in the other illustrations. Figure 2, of *Pogonatum urnigerum*, is a cross-section of a leaf showing the adaxial lamellae. Figure 3 shows the ampliate-clasping nature of *Fissidens bryoides* leaves and their differentiated leaf boarder. Figure 4 is a cross-section through a stem of *Hypnum subimponens* showing that the outer walls of the surface cells are thinner than the walls of the inner cortical cells. Figure 5 shows the multiply papillose laminal cells and the costa of *Anomodon attenuatus*. In this way, the anatomical order of nature is revealed.

---

[1] Department of Ecology and Evolution, State University of New York, Stony Brook, NY 11794

New York Botanical Garden Library
3 5185 00349 6179



Figs. 1-5. 1. The roll-and-chop method, a side view of how the needle and razor blade are held (though one would normally be looking down on this through a scope). 2. *Pogonatum urnigerum*. 3. *Fissidens bryoides*. 4. *Hypnum subimponens*. 5. *Anomodon attenuatus*.

EVANSIA
The Missouri Botanical Garden
P.O. Box 299
St. Louis, MO 63166-0299 USA

Luesther T Mertz
LIBRARY
MAY 2 4 2000
NEW YORK
BOTANICAL GARDEN

XE
V3
v.7
n.2

EVANSIA

Volume 7 Number 2

Additions to the Lichen Flora of Colorado and North America

William A. Weber - 17

Collectors of *Syrrhopodon texanus*

William D. Reese - 26

The Practical Application of Common Names for the Genus *Sphagnum*

Cyrus B. McQueen - 29

Reply to McQueen

Janice M. Glime - 35

Three Mosses New to Mississippi

William D. Reese - 35

***Sphagnum angermanicum* in Central Quebec**

Norman Dignard & Denis Bastien - 36

The Distribution of North American Bryophytes
***Seligeria donniana* (Sm.) C. Muell.**

Dale H. Vitt - 39

***Syrrhopodon texanus* Sull. New to Delaware**

Bruce Allen - 40

© September, 1990, by the American Bryological and Lichenological Society

Editor:

Robert E. Magill
Department of Bryology
Missouri Botanical Garden
P.O. Box 299
St. Louis, MO 63166-0299
U.S.A.

ISSN 0747-9859

Evansia volume 7, number 1 was mailed on 8 May 1990

Additions to the Lichen Flora of Colorado and North America

William A. Weber[1]

The following list of 127 taxa were not reported for Colorado by the catalog of Shushan & Anderson (1969), the schedae of *Lichenes Exsiccati COLO* (Weber 1981, 1984, 1989), or other published papers. These records are published in anticipation of the imminent appearance of a comprehensive *Catalog of the Flora of Colorado: Vascular Plants, Bryophytes, and Lichens*. In the new Catalog, first reports of Colorado lichens published by other authors will be referenced, but new reports generated by Herbarium COLO will be published separately before listing. For the sake of brevity, a minimal citation is given for species for which there are many herbarium records. All specimens are housed in Herbarium COLO, Boulder. Nineteen additions (*) to the North American checklist (Egan 1987) are included: *Aspicilia excavata, Caloplaca adnexa, C. saxifragarum, Candelariella plumbea, Celidium varians, Dermatocarpon vellereum, Ephebe perspinulosa, Gongylia muscorum, Lecanora subaurea, Lecidea fissuriseda, Leciographa lamyi, Melanolecia transitoria, Micarea elachista, Parmelinopsis swinscowii, Peltigera erumpens, Pharcidia dispersa, Rhizocarpon santessonii, Rinodina castanomela,* and *Squamarina degelii*.

Acarospora glaucocarpa (Wahlenb.) Koerb. Many records. Montrose Co.: W Paradox Creek, 2 mi below Buckeye Reservoir, *Weber et al L-2985, 31311*.

Anaptychia ulotrichoides (Vain.) Vain. Mesa Co.: Unaweap Canyon, Nancy Hanks Gulch, *Weber, Kunkel & LaFarge L-57127*, Colorado Nat. Mon., Redlands Road, *Shushan & Weber L-4962*.

Apatoplaca oblongula (H. Magn.) Poelt & Hafellner. Mesa Co.: on friable sandstone, Colorado Nat. Mon., 3 mi S of Fruita, *Shushan & Weber L-5273*. Montezuma Co.: N rim Mesa Verde above head of Navajo Canyon, *Weber L-2399*.

Aspicilia candida (Anzi) Hue. Many records. On sedimentary rocks at high altitudes. Gunnison Co.: trail from Gothic through Virginia Basin to summit of Virginia Ridge, *Weber L-6209*.

Aspicilia contorta (Hoffm.) Kremp. Many records. On limestone and calcareous sandstone. Larimer Co.: outcrops of Ingleside Formation, Owl Canyon, *Shushan & Weber L-4783*.

***A. excavata** Thor & Timdal, Lichenologist 18:179-182. 1986. Boulder Co.: On mortar, retaining walls on Univ. of Colorado campus, *Timdal & Weber L-83547*. Previously known from Norway.

[1] University of Colorado Museum Campus Box 350, Boulder, CO 80309

Aspicilia laevata (Ach.) Arn. Many collections. Gunnison Co.: trail from Gothic to Virginia Basin, 9,600-12,000 ft., *Weber L-6219.*

Aspicilia mazarina (Wahlenb.) R. Sant. Clear Creek Co.: alpine saddle between summit of Mt. Evans and Mt. Epaulet, 3990 m, on constantly irrigated stones in stream, 13 Aug. 1977, *Weber & Joergensen L-65133.*

A. radiosa (Hoffm.) Poelt & Leuckert. Boulder Co.: Boulder Canyon 2.6 mi W of Sugarloaf turnoff, on granite outcrops and talus, *Anderson, Poelt, & Weber L-65342.* Dakota Ridge between Altona and Lyons, *Weber & Shushan 3378.*

A. sublapponica A. Zahlbr. Larimer Co.: Rocky Mountain Nat. Park; Mummy Range, Mt. Chiquita, *Anderson L-35363.*

A. subsorediza (Lynge) R. Sant. Boulder Co.: 8 mi W of Nederland, 1 mi W of Fourth of July Campground, *Anderson L-62579.*

Baeomyces rufus (Huds.) Rebent. Grand Co.: Williams Fork Mts., Sugarloaf Campgr. to Bobtain Mine, *Weber 65415.*

Buellia elegans Poelt. San Miguel Co.: Big Gypsum Valley, on N-facing slopes of low gypsum hills, *Timdal, Weber & Bratt L-83620.* Eagle Co.: 2 mi S of Gypsum along E side Gypsum Creek Valley, *Weber & Timdal L-83555.*

B. epigaea (Hoffm.) Tuck. San Miguel Co.: Big Gypsum Valley, N-facing slopes of low gypsum hills, *Timdal, Weber & Bratt L-83622.* Montrose Co.: Paradox Valley, *Timdal, Weber & Bratt L-83615.* Egan (1987) suggested that American reports of this should be referred to *B. elegans*, but in my opinion the species are distinct.

B. geophila (Flk. *ex* Somm.) Lynge. Clear Creek Co.: Summit Lake, Mt. Evans, *Weber & Shushan L-5643.* Boulder Co.: Rollins Pass, *Shushan & Anderson L-25777.* Larimer Co.: Battle Mt., NE of Long's Peak, *Anderson L-34010.*

***Caloplaca adnexa** Vezda, Lichenes Selecti Exsiccati, Fasc. LIX, No. 1471. 1977. Many records. Larimer Co.: Rocky Mt. Nat. Park; Trail Ridge, Mummy Mt., Sundance Mt., Mt. Richtofen, Mt. Ida, *Anderson L-30438, 30601, 34223, 34415, 34711.*

C. atroalba (Tuck.) Zahlbr. Many records. Mesa Co. On sedimentary rocks. Mesa Co.: mouth of Fruita Canyon, *Shushan & Weber L-5253.*

C. exsecuta (Nyl.) Dalla Torre & Sarnth. Grand Co.: Neversummer Range, Lulu Creek, *Anderson L-34690.* Gilpin Co.: S of Rollinsville, S side of S Boulder Creek drainage, *Anderson, Poelt, & Weber L-65353.*

C. luteominia (Tuck.) Zahlbr. Many records. Moffat Co.: Roundtop Mt., Dinosaur Nat. Mon., *Alexander L-228.*

C. microphyllina (Tuck.) Hasse. Many records. Common on wood of *Sabina* species. Larimer Co.: Little Thompson River, *Weber, Shushan & Hale L-2252.*

C. modesta (Zahlbr.) Fink. Many records. Montezuma Co.: Beaver Cr., 6 mi N McPhee, *Shushan L-11329.* Larimer Co.: Dakota Ridge 22 mi NW Ft. Collins, *Shushan & Anderson L-20142.* (*C. squamosa* [B. de Lesd.] Zahlbr., *C. sipeana* Magn.)

C. pellodella (Nyl.) Hasse. San Miguel Co.: Gypsum Gap, on aeolian sandstone rimrock at crest of pass, *Weber & Timdal L-83563*. The spelling given is the original one.

C. rubelliana (Ach.) Lojka. Baca Co.: Dodge Ranch SW of Utleyville, on sandstone, *Shushan L-8178*.

C. saxicola (Hoffm.) Nordin. Many records. Larimer Co.: Owl Canyon, *Weber & Timdal L-83548*. Rio Blanco Co.: Piceance Creek, *Weber & Shushan L-24147*.

***C. saxifragarum** Poelt, Fedde's Repertorium 58:176. 1955; Mitteil. Bot. Staatssamml. MÜnchen 2:49. 1955. Boulder Co.: on *Selaginella*, Niwot Ridge, Weber & Nelson L-55446. Larimer Co.: Mummy Mt, *Anderson L-30418*. Grand Co.: Mt. Richthofen, *Anderson L-34741*.

C. tetraspora (Nyl.) Oliv. Many records. Clear Creek Co.: Mount Evans, *Weber L-3760*.

C. vitellinula (Nyl.) Oliv. Many records. Larimer Co.: Rocky Mt. Nat. Park, Deer Ridge, *Anderson L-34353*.

C. wrightii (Willey) Fink (Syn. *C. herbidella*). Huerfano Co.: Spring Creek Campground, 10 mi SW La Veta, on *Abies concolor, Shushan L-24858*.

Candelariella placodizans (Nyl.) Magn. Many records. Larimer Co.: Rocky Mt. Nat. Park, Flattop Mt., 11,600-12,000 ft., *Anderson L-34132*.

***C. plumbea** Poelt & Vezda, Folia geobot. phytotax. 11:88. 1976, Praha. Boulder Co.: N-facing slope Boulder Canyon, 2.6 mi W of Sugarloaf junction; granite outcrops and talus blocks, 1950 msm., *Anderson, Poelt & Weber L-65336*.

C. subdeflexa (Hoffm.) Zahlbr. Mesa Co.: Pinon Mesa, S Glade Park, on juniper, *Shushan & Weber L-4974*, !Hakulinen.

Carbonea vitellinaria (Nyl.) Hertel. Boulder Co.: Rocky Mt. Nat. Park, Wild Basin, 8,600, *Anderson L-30122*. Larimer Co.: Rocky Mt. Nat. Park, Trail Ridge, *Weber & Klockenbrink L-63398*.

Catinaria atropurpurea (Schaer.) Vezda & Poelt in Poelt & Vezda. Douglas Co.: Jackson Gulch, 13 mi SW Sedalia, *Anderson L-20724a*. Larimer Co.: Rocky Mt. Nat. Park, Glacier Gorge, *Anderson L-30915*.

***Celidium varians** Arn., Flora 44:678. 1862. Larimer Co.: on *Lecanora rupicola*, Little Thompson River 10 mi above Lyons, *Weber, Shushan & Hale L-2247*.

Cladina stellaris (Opiz) Brodo. Park Co.: in shady spruce-fir forest on N-facing slope, edge of forest and valley bottom wetland, on trail (section 10) between Lost Park Campground, Pike National Forest, and Wigwam Park, Lost Creek Wilderness Area, Tarryall Range, 10 Aug. 1988, *David J. Cooper L-84093*. Unrecorded in the western United States west of Minnesota.

Cladonia cervicornis (Ach.) Flotow subsp. **verticillata** (Hoffm.) Ahti. Many records. Boulder Co.: 8 mi N Nederland, *Shushan & Magnusson L-13317*. Grand Co.: E St. Louis Cr., *Weber & Dahl L-1659*.

Dermatocarpon intestiniforme (Koerb.) Hasse. Boulder Co.: Steamboat Mt., 2 mi NW Lyons, *Hertel & Weber L-55145*; Gregory Canyon, *Weber L-6290*; Boulder Canyon 3 mi W Sugarloaf jct., *Anderson 30091*.

D. luridum (With.) Laundon. Larimer Co.: Owl Canyon, near Livermore, *Weber & Shushan L-4796*, !Thomson (as *D. weberi*).

***D. vellereum** Zschacke in Rabenh., Krypt-Fl. Abt. I/I.: 638. 1934. Many records. Boulder Co.: Dakota Ridge 4 mi NE Lyons, *Anderson 20374a*. Mesa Co.: 3 mi S of Fruita, *Shushan & Weber L-4983*.

Diploschistes actinostomus (Pers.) Zahlbr. Many records. Boulder Co.: on quartzite, Gregory Canyon, *Weber L-8498*.

D. muscorum (Scop.) Sant. in Hawksw. Jefferson Co.: Lake Wellington, on *Cladonia*, Cummings *Lich. Bor. Am.* 266 (as *Urceolaria scruposa var. bryophila*). Douglas Co.: Devils Head, 14 mi SW Sedalia, *Weber & Shushan L-595*.

***Ephebe perspinulosa** Nyl. ex Norrlin, Flora Kareliae Onegensis, II (Lichenes). Medd. Soc. Fauna Flora Fenn. 6. 1876. Larimer Co.: W base McGregor Mt. near Bighorn Cr., Rocky Mt. Nat. Park, *Anderson L-35416*, !Henssen.

Evernia mesomorpha Nyl. Boulder Co.: on *Pseudotsuga*, Boulder Canyon 12 mi W Boulder, *Weber et al. L-69228*; Boulder Canyon 3 mi W of Boulder Falls, *Anderson L-35127*.

Flavoparmelia baltimorensis (Gyel. & Foriss) Hale. Larimer Co.: Dakota Ridge 4.5 mi SW Fort Collins, *Anderson L-20283*.

***Gongylia muscorum** Zschacke in Rabenh., Krypt.-Fl. IX, Abt. I/I: 374. 574. Boulder Co.: Rocky Mt. Nat. Park, Wild Basin, Calypso Cascades, *Anderson L-30011*.

Gonohymenia nigritella (Lettau) Henssen. Many records. Boulder Co.: Lee Hill road 4 mi N Boulder, *Weber L-4565*. Grand Co.: Rocky Mt. Nat. Park, W slope Shipler Mt., *Anderson L-34702*, !Degelius.

Gyalecta peziza (Mont.) Anzi. Larimer Co.: Rocky Mt. Nat. Park, Trail Ridge, *Anderson L-34960a*; NW slope Mt. Chapin, *Anderson L-34872a*, !Vezda.

Hymenelia lacustris (With.) Poelt & Vezda. Larimer Co.: Rocky Mt. Nat. Park, Neversummer Range, Hell's Hip Pocket, *Anderson 34585a*.

Hypocenomyce sorophora (Poelt) James & Poelt. Boulder Co.: Rocky Mt. Nat. Park, Wild Basin, *Anderson L-35506*. Park Co.: 11.3 mi E Jefferson on road to Lost Park, *Shushan L-5527*.

Kirschsteiniothelia aethiops (Berk. & Curtis) D. Hawksw. Jefferson Co.: Bull Gulch between Plainview and Eldorado Springs, *Weber & Anderson L-36359*.

Lecanora bipruinosa Fink. Montrose Co.: Paradox Pass, on sandstone cliffs, *Timdal, Weber & Bratt L-83568*.

L. flowersiana H. Magn. Mesa Co.: Colorado Nat. Mon., 3 mi S Fruita, *Shushan & Weber L-5272*. Yuma Co.: 6 mi NE Wray, *Shushan & Anderson L-32946*.

L. fuliginosa Brodo. Gilpin Co.: 3 mi N Blackhawk, *Weber L-65072*. Larimer Co.: Rocky Mt. Nat. Park, Hidden Valley, *Weber & Randolph L-76018*, Mt. Chiquita, *Anderson L-34289*, Flattop Mt., *Anderson L-34086*.

L. meridionalis H. Magn. Many records. Archuleta Co.: on juniper, 2 mi N Chromo, *Shushan L-9917a*. Rio Blanco Co.: Piceance Cr. valley, *Weber & Shushan L-24174*.

L. nevadensis H. Magn. Many records. Mesa Co.: 14 mi S Loma, *Weber, Lich. Exsicc. COLO 118* (as *L. garovaglii*). Moffat Co.: Round Top Mt., *Alexander L-226.* Delta Co.: 5 mi N Eckert, *Weber L-621*, !Ryan.

***L. subaurea** (Eitner) A. Zahlbr., Cat. Lich. Univ. 5:547. 1928. *L. hercynica* Poelt & Ullrich. Ouray Co.: between Ouray and Crystal Lake, 2,900 m., steep, rust-stained rock face close to the river, *Timdal L-83558.*

L. thallophila H. Magn. Grand Co.: Rocky Mt. Nat. Park, North Inlet, *Anderson L-34655.* Mesa Co.: Colorado Nat. Mon., 4 mi S Fruita, *Weber & Shushan L-5179.*

L. utahensis H. Magn. Mesa Co.: Colorado Nat. Mon., 3 mi S Fruita, *Shushan & Weber L-4996.* Montezuma Co.: Spruce Canyon, Mesa Verde Nat. Park, *Weber 2308.*

L. valesiaca (Müll.-Arg.) Stiz. Boulder Co.: Steamboat Mt., 2 mi W Lyons, *Weber & Klockenbrink L-64608*, !B. Ryan.

L. viriduloflava B. de Lesd. Montezuma Co.: Beaver Creek, 6 mi N McPhee, *Shushan L-11321.* Boulder Co.: Rocky Mt. Nat. Park, Wild Basin, *Weber L-2890.* Huerfano Co.: 8 mi S La Veta, *Shushan L-5847.* Gunnison Co.: on *Abies*, N Gothic, *Weber & Shushan 2800.*

***Lecidea fissuriseda Poelt**, Mitt. Bot. Staatssamml. München 4:181. 1961. Park Co.: Horseshoe Cirque, *Timdal L-83361.*

L. lurida Ach. Boulder Co.: Steamboat Mt., 2 mi NW Lyons, *Weber & Anderson L-25964*, !Timdal.

L. nylanderi (Anzi) Th. Fr. Summit Co.: Monte Cristo Creek, N base of Hoosier Pass, *Shushan & Weber L-2650.*

L. paupercula Th. Fr. Routt Co.: Hahn's Peak, 3 mi E Columbine, *Weber L-39946.*

L. umbonata (Hepp) Mudd. Gunnison Co.: Copper Cr. to Conundrum Pass, *Weber & Shushan L-5822*; Gothic to summit Virginia Ridge, *Weber 6224*, !Hertel.

Lecidella inamoena (Müll. Arg.) Hertel. Garfield Co.: 9.8 mi W Grand Valley, *Shushan 11269*, !Hertel.

***Leciographa lamyi** (Rich.) Sacc. & D. Sacc., in Saccardo, Syll. Fung. 18:182. 1906. Clear Creek Co.: over mosses on tundra, Summit Lake, Mt. Evans, *Shushan & Weber L-4701*, !Santesson.

Leciophysma furfurascens (Nyl.) Gyelnik. Larimer Co.: Rocky Mt. Nat. Park, NE slope Mt. Wuh, *Anderson L-35313*, !Henssen.

Lempholemma myriococcum (Ach.) Th. Fr. Boulder Co.: in moss, N-facing cliffs, Boulder Canyon, 0.5 mi W Boulder Falls, *Weber & Shushan L-1701.*

L. vesiculiferum Henssen. Larimer Co.: Rocky Mt. Nat. Park, Forest Canyon, *Anderson L-35289, L-35833.*

Melanelia fuliginosa (E. Fr. ex Duby) Essl. in Egan. Boulder Co.: Boulder Canyon near Tungsten, Shushan & Weber L-17957. Hinsdale Co.: Cebolla Cr. Campgr., *Weber L-38438.* Larimer Co.: Rocky Mt. Nat. Park, *Anderson L-30225, 34983*, !Esslinger.

M. panniformis (Nyl.) Essl. Boulder Co.: Boulder Canyon, Castle Rock, *Weber & Almborn L-50863.* Larimer Co.: Rocky Mt. Nat. Park, Poraine Park to Fern

Lake, *Weber & Grove, L-53306*, !Esslinger.

M. sorediata (Ach.) Goward & Ahti. Many records. Boulder Co.: Rocky Mt. Nat. Park, Wild Basin, *Anderson L-30530, 35167*, !Esslinger,

M. subaurifera (Nyl.) Essl. Boulder Co.: Boulder Canyon, *Weber L-2518*, Flatirons, trail to Royal Arch, *Weber L-4874, 4876.*

***Melanolecia transitoria** (Arn.) Hertel ex Poelt, Bestimmungsschlüssel II:365. 1981; *Lecidea transitoria* Arn., *L. subcoerulescens* Arn., *Tremolecia transitoria* (Arn.) Hertel. Park/Summit Co.: W end of Hoosier Ridge, ca. 11 mi N of Fairplay; on limestone, tundra, 13,000 ft. alt., with *Protoblastenia incrustans*, 8 July 1956, *Shushan & Imshaug.*

***Micarea elachista** (Koerb.) Coppins & R. Sant. in Coppins, Bull. Brit. Mus. (Nat. Hist.) Bot. 11:131. 1983. Boulder, Larimer, Grand Co.: Rocky Mt. Nat. Park, *Anderson L-30162, 30543, 30771, 35093, 35308.*

Micarea misella (Nyl.) Hedlund. Many records. Boulder Co.: Boulder Canyon 9.7 mi W Boulder, *Anderson L-35159*, Rocky Mt. Nat. Park, Meadow Mt., *Anderson L-35599.*

Microthelia melanostigma Th. Fr. [*Muellerella sp., fide* Egan (1987). Boulder Co.: on Pierre shales 6 mi N Boulder, *Weber et al. L-2155, 53863, 62572.*

Mosigia gibbosa (Ach.) Koerb. Boulder Co.: Boulder Canyon, 2.6 mi W Sugarloaf turnoff, *Anderson, Poelt & Weber L-65338.* Gilpin Co.: S Rollinsville, Crackerjack Placer Claim, *Anderson, Poelt & Weber L-65345.*

Neofuscelia subhosseana (Essl.) Essl. Garfield Co.: on sandstone, juniper gully 9.8 mi W Grand Valley, Shushan L-11266, !Esslinger.

Ochrolechia frigida (Sw.) Lynge. Many records. Boulder Co.: Rocky Mt. Nat. Park, Wild Basin, *Anderson L-35087, 35171-3.* Grand Co.: Rocky Mt. Nat. Park, East Inlet, *Anderson 35752*; Mt. Enentah, *Anderson L-4302.*

Pachyospora mutabilis (Ach.) Mass. Archuleta Co.: on oak, 2 mi N Chromo, *Shushan L-9874, 9889.* Montezuma Co.: N rim Mesa Verde below Park Point, *Weber L-2398.* Montrose Co.: Black Canyon of the Gunnison, *Awasthi L-36463.* I follow Brodo (1977) in maintaining this separate from *P. verrucosa.*

***Parmelinopsis swinscowii** (Hale) Elix & Hale, Mycotaxon 29:243. 1987. Boulder Co.: granite cliffs just W of Boulder Falls, *Weber & Jörgensen L-65330.* Larimer Co.: S. St. Vrain Canyon 9 mi SW Lyons, *Weber & Jörgensen L-65124.*

Parmotrema crinitum (Ach.) Choisy. Many records. Boulder Co.: Boulder Canyon, 3 mi W Boulder, *Weber L-36423.* Larimer Co.: Rocky Mt. Nat. Park, *Anderson L-34981.*

***Peltigera erumpens** (Tayl. in Hook.) Vain., Étud. Lich. Brésil 1:182. 1890 Many records. Grand Co.: Rocky Mt. Nat. Park, Jackstraw Mt., *Anderson L-30663.* Boulder Co.: Green/Albion Lake Valley, *Shushan & Johnson L-3901.*

Peltigera praetextata (Somm.) Vain. Summit Co.: Blue Lake, valley of Monte Cristo Cr., *Weber & Anderson L-50461.* Boulder Co.: N St. Vrain Canyon E Longmont Reservoir, *Anderson L-34772.*

Phaeophyscia hirsuta (Mereschk.) Essl. Mesa Co.: Pinon Mesa, S Glade Park, Shushan& *Weber L-4979*, !Esslinger.

P. hispidula (Ach.) Essl. Boulder Co.: Boulder Canyon above Boulder Falls, *Weber & Shushan L-2170*; 3 mi W Boulder, *Weber L-36419.*

P. kairamoi (Vain.) Moberg. Hinsdale Co.: Cebolla Creek between Cathedral and Slumgullion Pass, *Weber 38470, 38471*, !Esslinger.

***Pharcidia dispersa** (Lahm) Wint. ex Rabenh., Kryptfl. Deutschl. (2) Band I(2): 346. 1885. Larimer Co.: 19 mi N of LaPorte, *Shushan & Weber L-2347, !Santesson.*

Physcia dimidiata (Arn.) Nyl. Larimer Co.: on *Pinus edulis*, Owl Canyon, *Shushan & Weber L-4732.*

P. magnussonii Frey. Gilpin Co.: S of Rollinsville, S Boulder Cr., Anderson, Poelt & *Weber L-65359.* Custer Co.: Wet Mts., Hardscrabble Cr., *Weber & Wittmann 83543.* Jefferson Co.: The Castle, Wellington Lake, *Weber L-69230.*

Physconia detersa (Nyl.) Poelt. Boulder Co.: 1.6 mi NE Allens Park, N St. Vrain Canyon, Boulder Canyon 1.5 above mouth, *Weber & Kristinsson L-52912.*

P. grisea (Lam.) Poelt ssp. **lilacina** (Arn.) Poelt. Montezuma Co.: sandstone ledges, Mesa Verde, *Weber L-2337.*

P. perisidiosa (Erichs.) Moberg. Boulder Co.: bottom Skunk Canyon, Dakota Ridge, *Weber et al. 52099.* Jefferson Co.: Rocky Flats Pediment, 7 mi S Boulder, *Kunkel et al. L-59094.*

Polyblastia cucurbitula Thomson & Murray. Clear Creek Co.: Guanella Pass, 3600 m, *Anderson & Carmar L-60144.*

Polysporina simplex (Davies) Vezda. Many records. Mesa Co.: Colorado Nat. Mon., 3 mi S Fruita, *Shushan & Weber L-4946.* Montezuma Co.: 30 mi W Cortez, *Shushan L-11,394.*

Porocyphus coccodes (Flot.) Koerb. Boulder Co.: Boulder Canyon 8.6 mi W Boulder, *Anderson L-61360.* Larimer Co.: Rocky Mt. Nat. Park; Lumpy Ridge, *Anderson 75387, 34997*; mouth of Forest Canyon, *Anderson 3944.*

Protoblastenia incrustans (DC.) Steiner. Summit Co.: east end of Hoosier Ridge, 11 mi N Fairplay, on limestone, *Shushan & Imshaug L-8213.*

P. rupestris (Scop.) Steiner. Boulder Co.: on shales, between Altona and Lyons, *Shushan & Brickler L-3382a.* Summit Co.: east end Hoosier Ridge, 11 mi N Fairplay, *Shushan & Imshaug L-8213.*

Punctelia subrudecta (Nyl.) Krog. Clear Creek Co.: 6 mi SW Evergreen, *Anderson L-61317.* Boulder Co.: Gregory Canyon, 1,940-1, *Kunkel L-61498.*

Pseudevernia intensa (Nyl.) Hale & Culb. El Paso Co.: Pikes Peak region, *Macbride L-68414, Clements & Clements Crypt. Format. Colo. 110.* Boulder Co.: Rocky Mt. Nat. Park, Wild Basin, *Anderson L-35175.* Hale & Culberson cited no specimens.

Pyrenocollema tichothecioides (Arn.) R. C. Harris. Boulder Co.: Lee Hill Road, Boulder Open Space, on Niobrara limestone ridge, *Weber L-85382.*

Ramalina sinensis Jatta. Many records. Archuleta Co.: 2 mi N Chromo, on oak, *Shushan 9899.* Grand Co.: Rocky Mt. Nat. Park, Milner Pass, *Weber & McVean L-45217.*

***Rhizocarpon santessonii** Timdal, Lichenologist 18:317-320. 1986. Larimer Co.: Rocky Mt. Nat. Park, Flattop Mt., on massive rock outcrops above Tyndall Gorge, *Anderson L-35481, 35865*, !Timdal.

Rhizoplaca subdiscrepans (Nyl.) R. Sant. Boulder Co.: Dakota Ridge 0.5 mi N Boulder, *Anderson L-20013*. Moffat Co.: 16 mi N Axial, *Ryan L-84036*. Montrose Co.: Paradox Pass, *Timdal, Weber & Bratt L-83571*.

Rinodina brouardii B. de Lesd. Elbert Co.: on sandstone, 4 mi NW River Bend, *Shushan 7994*, !Sheard.

***R. castanomela** (Nyl.) Arn., Verh. zool.-bot. Ges. Wien 37:121. 1887. Larimer Co.: Dakota Ridge 22 mi N Ft. Collins, *Shushan & Anderson L-20127*. Boulder Co.: limestone, N Boulder, *Anderson L-30093*. Summit Co.: Lake Dillon, Keystone, *Weber et al. L-72138*, !Sheard.

R. confragosa (Ach.) Koerb. Boulder Co.: Boulder Canyon 11 mi W Boulder, *Weber & Awasthi 19486*; trail to Royal Arch, SW Boulder, *Weber & Shushan L-3217*, !Sheard.

R. dakotensis H. Magn. Boulder Co.: on *Acer glabrum*, Gregory Canyon W Boulder, *Weber L-18551*, !Sheard.

R. euryspora Zahlbr. *ex* Hasse. Rio Blanco Co.: Piceance Creek W Rio Blanco, *Weber & Shushan L-24163*, !Sheard.

R. metaboliza Vain. Jefferson Co.: Deer Creek, on *Populus angustifolia, Carmer L-24650*, !Sheard.

R. mucronatula H. Magn. La Plata Co.: 3 mi N Bondad, on juniper, *Shushan L-5721*, !Sheard.

R. septentrionalis Malme. Boulder Co.: 3 mi E Nederland, *Shushan & Weber L-407*. Huerfano Co.: 8 mi S La Veta, *Shushan L-5721*, !Sheard.

***Squamarina degelii** Frey & Poelt, Mitt. Bot. Staatssamml. München 19-20:528. 1958. San Miguel Co.: Gypsum Gap, between Slick Rock and Big Gypsum Valley, on aeolian sandstone, crest of pass, *Weber & Timdal 83566*.

Steinia geophana (Nyl.) B. Stein. Douglas Co.: Rampart Range road 11.6 km NE jct with Jackson Creek road, *Anderson & Carmer L-60152*.

Stereocaulon incrustatum Flk. Larimer Co.: Long's Peak, subalpine forest, on soil among spruces, *Kiener L-15815*, !Lamb.

Sticta beauvoisii Delise. Boulder Co.: Boulder Canyon 3 mi W Boulder, *Weber L-36421*. Larimer Co.: Big Thompson Canyon, *Anderson, Lich. W. N. Amer. Exsicc. 5, L-64048* (as *S. weigelii*).

Synalissa symphorea (E. Fr.) Coppins & James. Boulder Co.: Castle Rock, Boulder Canyon, 12 mi W Boulder, *Anderson L-35794*.

Tephromela aglaea (Somm.) Hertel & Rambold. Boulder Co.: Rocky Mt. Nat. Park, Wild Basin, N base Meadow Mt., *Anderson L-35614*.

Trapeliopsis flexuosa (E. Fr.) Coppins & James. Boulder Co.: Pine Brook Hills, NW Boulder, *Anderson L-30111*. Grand Co.: Current Cr., Berthoud Pass, *Shushan, Weber & Smith L-24,800*.

Umbilicaria cinereorufescens (Schaer.) Frey. Boulder Co.: First Flatiron, Boulder, *Weber L-53862*; S St. Vrain Canyon, *Weber, Santesson & Anderson L-41953*. Gilpin Co.: S Rollinsville, *Anderson, Poelt & Weber L-65357*.

Verrucaria levata Ach. Many records. Grand Co.: Current Cr., Berthoud Pass, *Shushan, Weber & Smith L-24,817*. Larimer Co.; Fox Cr., Little Thomson River drainage, Glen Haven, *Weber L-2048*. Very probably, *V. pachyderma* Arnold, is a phase with a very dark thallus.

Xanthoparmelia angustiphylla (Gyelnik) Hale. Jefferson Co.: The Castle, Lake Wellington, vertical face of granite boulder, *Weber & Klockenbrink L-63362*, !Hale (as *X. hypopsila*, but see Egan 1990).

X. ioannis-simae (Gyel.) Hale. Boulder Co.: 1 mi NE Gold Hill on Left Hand Cr., *Wetmore L-58262*, !Nash.

X. plittii (Gyel.) Hale. Montezuma Co.: 30 mi W Cortez, *Shushan 11,404*. Larimer Co.: 22 mi N Fort Collins, *Shushan & Anderson L-20130*, !Hale. Moffat Co.: Gates of Lodore, *Flowers L-71483*, !Nash.

Xylographa abietina (Pers.) Zahlbr. Larimer Co.: Rocky Mt. Nat. Park; Fall River Canyon, *Anderson L-30281*; Endovalley Campgr., *Anderson L-30218*.

Literature Cited

Brodo, I. M. 1976 [April 1977]. *Lichenes Canadenses Exsiccati: Fascicle II*. The Bryologist 79: 385-405.

Egan, R. S. 1987. A fifth checklist of the lichen-forming lichenicolous and allied fungi of the Continental United States and Canada. The Bryologist 90: 77-173.

__________ 1989. Changes in the "Fifth checklist..." Edition I. The Bryologist 92: 68-72.

__________ 1990. Changes in the "Fifth checklist..." Edition II. The Bryologist 93: 211-219.

Shushan, S., & R. A. Anderson. 1969. Catalog of the lichens of Colorado. The Bryologist 72: 451-483.

Weber, W. A. 1981. Lichenes Exsiccati distributed by the University of Colorado Museum, Boulder, Fascicles 1-15, Nos. 1-600, 1961-1979. Mycotaxon 13: 85-104.

__________ 1984. Lichenes Exsiccati.... Fascicle 16, No. 601-640. Univ. of Colorado Museum.

__________ 1989. Lichenes Exsiccati.... Fascicle 17-18, No. 641-700. Univ. of Colorado Museum.

Collectors of *Syrrhopodon texanus*

William D. Reese [1]

When I investigated (1984) the phenology of growth and reproduction of *Syrrhopodon texanus* Sull.--the only member of the Calymperaceae endemic to continental North America--I noted the names of the collectors of the specimens I studied. As an interesting item of bryological trivia--somewhat of a history of collection of a single species of moss--the names I assembled are listed below. An asterisk at the name indicates that 10 or more of the specimens I studied were collected by that person. Herbaria from which I examined specimens were DUKE, FLAS, LAF, MICH, NY, SIU, TENN, and US.

To make the list of collectors more complete, I also include the names of collectors provided recently by the curators of CINC, MO, SMS, and TAMU, herbaria from which I did not see specimens in my original study; these names are indicated by "+" in the list. Altogether, the names of 105 collectors are associated with specimens of *S. texanus* in the herbaria consulted.

Perusers of the list will note the names of contemporary collectors as well as names from the past, including some botanists whose names are generally associated primarily with vascular plants. The latter include, for example, Donovan S. Correll, Roland M. Harper, Cyrus G. Pringle (collector of the only known specimen of *S. texanus* from Mexico, near Monterrey), John K. Small, and Stanley Jay Smith (who collected *S. texanus* on Long Island, New York--the northeastern-most locality for the species).

While many of the names are more or less familiar to me, and will be known also to many readers, others belong to collectors unknown to me. I assume that at least some of the "unknown" names are those of students in various bryology courses while others belong to amateur botanists who were only casual collectors of bryophytes. I include the first name for collectors when I had access to such information. When I recorded the names of collectors from the specimens, I only noted the initials, and in some cases am unable to provide the given names.

---

[1] **Department of Biology, Box 42451, University of Southwestern Louisiana, Lafayette, LA 70504-2451**

+Allen, Bruce H.; and with Robert E. Magill
Allen, Charles M.
*Anderson, Lewis E.; and with Howard A. Crum; and with Allan J. Fife; and with G. L. Nesom & M. Treiber
Andrews, Albert LeRoy
Arant, E.
Austin, Coe Finch; and with John D. Smith
Baggs, B.
Bartley, Floyd
+Bartley, T. & Susan M. Moyle
+Baur, Kay E.
+Bell, Thomas
Beaven, E. S.
Blomquist, Hugo L.
+Bowers, Frank D.; and with Alvin Diamond; and with Robert R. Haynes
Brass, Leonard J.
Brassard, Guy R.
*Breen, Ruth Schornherst
Britton, Elizabeth G.
Buck, William R.
Cain, Stanley A.
Christensen, N.
+Churchill, Steven P.
Clark, Howard L.
Clebsch, Alfred
Clebsch, Edward
Conard, Henry S.
+Connolly, P. & Susan M. Moyle
Correll, Donovan S.
Crosby, G. T.
Crosby, Marshall R.
Crum, Howard A. (with Lewis E. Anderson)
Demarèe, Delzie
Derda, G.
+Diamond, Alvin (with Frank D. Bowers)
+Dorr, L. J.
+Fife, Allan J., Lewis Anderson & Joseph R. Rohrer
Frohne, W. C.
Fulford, Margaret H.
Garber, Abraham P.
*Griffin III, Dana
*Grout, Abel J.
Harper, Roland M.
Harvill, Alton M., Jr.
Haynes, Robert R.; and with Frank D. Bowers
Hermann, Frederick J.
Ireland, Robert R.
Jackson, C.
+Jennings, Otto E., G. K. Jennings & F. B. E. Jennings
+Jennings, G. K. (with Otto E. Jennings)
+Jennings, F. B. E. (with Otto E. Jennings)
Johnson, W. K.
Jones, E. F.
Jones, Raymond E.
Langlois, Auguste B.
Lawson (given name and initial lacking on specimen)
+Lawson, Tom
+Lewis, Walter H.
Mackaness, Faith Pennebaker
+Magill, Robert E.; and with Bruce H. Allen
Manuel, Monte G.
McFarlin, James B.
Mohr, Charles T.
+Moyle, Susan M.; and with P. Connolly; and with K. Wilhelm
+Mueller, D. M. J.
+Nesom, G. L., M. Treiber & Lewis E. Anderson
Neumann, Alan J.
Norris, Daniel H.
Patterson, Paul M.

Pennebaker, Faith (later Faith Pennebaker Mackaness)
Pringle, Cyrus G.
*Pursell, Ronald A.
Rapp, Severin
*Redfearn, Paul L., Jr.; and with Alice Redfearn
+Redfearn, Alice (with Paul L. Redfearn, Jr.)
*Reese, William D.
Robinson, Harold E.
*Rogers, Kenneth E.
+Rohrer, Joseph R. (with Allan J. Fife & Lewis E. Anderson)
+Rushing, Ann E.
+Schallert, Paul O.
Schofield, Wilfred B.
Schornherst, Ruth O. (later Ruth Schornherst Breen)
*Sharp, Aaron J.
Small, A. M.
Small, John K.
Smith, John D.; and with Coe F. Austin
Smith, Stanley J.
+Snider, Jerry A.
Solymosy, Sigmund
Standley, Jeanette P.
Standley, Paul C.
Stoneburner, Ann & Robert Wyatt
Stotler, Raymond E.
Taylor, Mrs. A. P.
+Treiber, M. (with G. L. Nesom & Lewis E. Anderson)
Vitt, Dale H.
Wagner, Kenneth A.
Wareham, Richard T.
Webster, Grady L. & Robert L. Wilbur
Welch, Winona H.
Westling, Andrew W.
Whitehouse, Eula
Wilbur, Robert L. (with Grady L. Webster)
+Wilhelm, K. & Susan M. Moyle
Wilson, Hollis R.
Wright, Charles (collector of the type specimen of *S. texanus*, at San Marcos, Texas)
Wyatt, Robert (with Ann Stoneburner)

At the time of my study, I held the record in terms of number of specimens of *S. texanus* in herbaria (138), followed by Lewis Anderson (72 specimens).

It is interesting that so many different individuals--including well-known amateur and professional botanists--have collected this moss, which is uncommon outside of its main range in the southeastern Coastal Plain. Doubtless the list above does not include the names of other collectors who have made herbarium specimens of *S. texanus* that were not in the herbaria included in this survey.

I thank Bruce Allen, Dale Mueller, Paul Redfearn, and Jerry Snider for providing the names of collectors of *S. texanus* from their herbaria.

Literature Cited

Reese, W. D. 1984. Reproductivity, fertility and range of *Syrrhopodon texanus* Sull. (Musci; Calymperaceae), a North American endemic. The Bryologist 87: 217-222.

The Practical Application of Common Names for the Genus *Sphagnum*

Cyrus B. McQueen[1]

There have been two recent articles advocating the use of common names for mosses (Glime 1989, Li and Glime 1989). The article by Li and Glime (1989) on common names for *Sphagnum* prompted me to respond to them by trying to create my own list of common names for the species they listed. This exercise convinced me that such a practice is not very useful or practical especially for the genus *Sphagnum*. In this article I would like to present my response to the common names they published for *Sphagnum* and conclude with an argument discouraging the use of any formal recognition for common names for this genus.

For a common name to be useful, I believe it should be descriptive of some feature of the plant that is observable in the field. Otherwise, the name is just as difficult to remember as a scientific name, so there is no increase in identification value of the common name over the latin name. I used this strategy in evaluating the names that Li and Glime published. After each scientific name is a list of the common names published by Li and Glime followed by what I think is an appropriate common name for the species.

Sphagnum: peat mosses, bog mosses: Although both of these names suggest the genus *Sphagnum*, several other bryophytes are known by these names, such as *Hypnum*, *Pleurozium*, *Campylium*, *Tomenthypnum*, *Scorpidium*, *Catoscopium*, *Riccardia*, *Bazzania*, and *Trichocolea*. This is no doubt due to the indiscriminant use of the term bog to apply to any mossy wetland.

S. aongstroemii: truncate-leafed peat moss: Descriptive, but this could also be used for *S. girgensohnii*. I would suggest adding a color, habitat, or environmental qualifier to the name. This species is pale compared to the latter species, which is green to whitish green, and also grows in open areas rather than woodlands. A more descriptive name would be the "pale truncate-leafed peat moss" or the "open peatland truncate-leafed peat moss."

S. capillifolium: acute-leaved peat moss: Since this is a very common small-leafed species (compared to the large-leafed species of section *Sphagnum*) that is often red throughout I would suggest a name like, "small-leafed red peat moss." See also *S. nemoreum, S. rubellum,* and *S. magellanicum*.

---

[1] **Environmental and Health Science Department, Johnson State College, Johnson, Vermont 05656**

S. compactum: neat bog moss, dense-leafed peat moss, cushion peat moss: "Cushion peat moss" is the most descriptive name since it does have a resemblence to *Leucobryum*.

S. contortum: twisted bog moss, twisted-branch peat moss: "Twisted-branch peat moss" is the most descriptive name.

S. cuspidatum: pointed peat-moss, long-leaved floating bog moss, horned bog moss, narrow-leafed peat moss, drowned kittens: I think that "long-leaved floating peat moss" is the most descriptive name. No comment on "drowned kittens."

S. fimbriatum: fringed bog moss, hairy-leafed peat moss: "Small fringed, stem leaf peat moss" is more descriptive of the species. See *S. lindbergii*.

S. fuscum: rusty peat moss: "Small-leafed brown peat moss" is more descriptive, to distinguish it from the other brown species such as *S. affine*, *S. austinii*, and *S. subfulvum*.

S. girgensohnii: Girgensohn's moss, white-toothed peat moss: The use of Girgensohn's name for a common name is no different than the scientific name and not useful for field identification. I would suggest "Woodland truncate-leafed peat moss".

S. imbricatum: fibriform wall peat moss: "Fibriform wall peat moss" is not very useful since the name refers to a microscopic character. This species is extremely difficult to identify in the field from *S. palustre, S. papillosum,* and *S. henryense*. It is paler than the other species, frequently has squarrose branch leaves, and grows in minerotrophic habitats such as willow-alder carrs and sedge fens, features that are shared by other species. I cannot think of an appropriate common name.

S. jensenii: pendent branch peat moss, Jensen's peat moss: This species is similar to *S. cuspidatum*, but it grows in on margins of poor and medium fens and is pale yellow to brown rather than green. A name which includes its habitat which is close to the water and its color would be more useful than using a proper name for the common name.

S. junghuhnianum: Junghuhn's bog moss, warm-loving peat moss: This is rare and perhaps a common name is not appropriate. This species is difficult to describe. I think this species illustrates the limitations of common name. Any common name incorporating a proper name will be just like the latin name, so why use it? As for the other name, there are many species that are found in the warmer climates of Southeastern United States, Central America, and South America.

S. lindbergii: Lindberg's bog moss: The stem leaf is similar to that of *S. fimbriatum*, but this species is larger and brownish in color. Perhaps "Large, brown fringed leafed peat moss" would be more descriptive.

S. magellanicum: Midway peat moss: What does "Midway peat moss" refer to? Since the source of this name is from Wu et al. (1984) I assume it refers to the Pacific Island of Midway. Another explanation is that something has been lost in the translation. This is the only red colored large leafed species (all species in section *Sphagnum* have larger leaves than most of the other species in the genus). Hence, I would suggest "Large leafed red peat moss." This easily distinguishes it from *S. capillifolium*. See *S. nemoreum* and *S. rubellum*.

S. nemoreum: acute-leaved peat moss, slender bog moss, sharp-leaved bog moss, pointed leaf peat moss: This is no longer a legitimate name. Flatberg lectotypified *S. capillifolium* as the legitimate name. This name is applied to rounded capitulum plants. See my article in the last issue of *The Bryologist* (McQueen 1989). I agree with Crum (1984) in recognizing one species and two varieties. Both taxa are red, grow in the open portions of peatlands, and small-leaved. The name *S. rubellum* (=*S. capillifolium* var. *tenellum*) refers to plants with flat-topped, stellate (five-rayed) capitula, and branches with five-ranked leaves (arranged in five rows). The name *S. capillifolium* (=*S. nemoreum*) refers to plants with rounded capitula (pompom shaped) without five-ranked branch leaves (imbricate), and forming prominent hummocks. In order to become more descriptive one could use the descriptive terms of the capitulum and branch leaf ranking. However, I would suggest lumping them together and calling both taxa "small leafed red peat moss".

S. obtusum: blunt-leafed peat moss: This species is similar to *S. jensenii*, but is best distinguished microscopically. It is also not very common, except further north. A more common species that would be encountered more often would be *S. angustifolium* which is in the same section, in about the same habitat. *Sphagnum angustifolium* has small blunt stem leaves. I think that since this species is more common than *S. obtusum*, that it deserves a common name, "small blunt-leafed peat moss."

S. palustre: spoon-leaved peat moss, reddish peat moss, spoon-leaved sphagnum, crimson bog moss, blunt-leaved bog moss, blunt-leaved bog moss, rag moss: The common names that have some reference to red in them, including crimson, are not useful since this species is green, pale green to golden brown in North America. The reference to the stem and branch leaves is not useful since other species in the section are nearly identical as far as macroscopic features are concerned. I cannot think of an appropriate descriptive common name for this species.

S. papillosum: gland-leaved bog moss, papillose peat moss: This species often has blunt spreading branches and is brown. Therefore, a descriptive common name could be "brown blunt spreading branch peat moss."

S. platyphyllum: flat-leafed peat moss: A suite of characters that are useful in identifying this species in the field are its large terminal bud and short branches. A common name could be "large bud short branch peat moss."

S. quinquefarium: five-branched peat moss: This species is very distinctive, but I think a more useful name would be "green five-ranked branch leaf peat moss." This is because *S. warnstorfii* also has five-ranked branch leaves, however it is usually dark red. Another distinctive feature of *S. quinquefarium* is that it is the only species in section *Acutifolia* that has three spreading branches per fascicle. This might also be incorporated into a common name.

S. recurvum: curved bog moss: Several species have recurved leaves, but I really cannot suggest a more descriptive common name.

S. recurvum var. **tenue** (=*S. angustifolium*): beak-leafed peat moss: Some distinctive features of this species, I recognize it at the species level as *S. angustifolium*, are its small blunt leafed stem leaves and its pink stem. See *S. obtusum*.

S. riparium: shore-growing peat moss: This species does have an extremely large terminal bud, larger than any other species in North America. Perhaps "large bud shore growing peat moss" would be more descriptive.

S. rubellum: see under *S. capillifolium*.

S. russowii: wide-tongued peat moss: Many species have "wide-tongued" stem leaves. The most distinctive feature of this species is that it is often found in the woods and is green tinged (speckled) with red. I would suggest "Woodland red tinged peat moss".

S. squarrosum: squarrose peat moss, spread-leaved peat moss, spread-leaved sphagnum, spreading-leaved bog moss, coarse-leafed peat moss, spreading-leaved peat moss: "Squarrose leaved peat moss" is the most useful name.

S. subsecundum: twisted bog moss, slant-leafed peat moss: A very troublesome group of taxa for North America. Since it does have a twisted appearance and is often found in fens, I would suggest "twisted branch fen peat moss". A name that describes the difficulty one encounters in trying to key out species from section *Subsecunda* might be more descriptive.

S. tenellum: least bog moss, soft-leafed peat moss: I cannot think of an appropriate name for this species that would be any more useful than its scientific name. It is small and delicate, perhaps "delicate peat moss" or more quaintly "dainty peat moss" would be appropriate.

S. teres: thin-leafed peat moss: This species is sometimes difficult to distinguish from *S. squarrosum*. However, the plants are usually smaller and not as squarrose as the latter species. Perhaps "small squarrose peat moss" would be useful. In some wet habitats this species has three spreading branches per fascicle versus only two for *S. squarrosum*. *Sphagnum teres* also grows in the open, whereas, *S. squarrosum* prefers shaded habitats.

It is apparent that the common names published by Li and Glime (1989) and the ones that I created share some common characteristics. In many cases the common names are not any more descriptive or useful than the scientific names. The majority of the common names are at least as long or longer than the scientific name and consist of nearly the same number of syllables. Most of the common names consist of more than two separate words. Except for a few, such as "squarrose peat moss", the names are not any more remarkable than the scientific names. In a few cases a common name did not seem appropriate either due to lack of distinguishable macroscopic features or simple rarity of the species. One further observation, without any regulations, I have just introduced into the literature new names for previously described species. Some of the species now have at least eight names, including the scientific name. So which name should be used?

These observations counter the arguments Glime (1989) used to justify the use of common names. Her first reason was that people find scientific names difficult to spell, pronounce, and remember. I do not find anything remarkably different in any of these names. The genus name *Sphagnum* consists of two syllables as does "peat moss" and "bog moss". However, the word *Sphagnum* carries with it a connotation of generic relationship that the common names do not have. Since all of these species are in the same genus, one only needs to use the specific epithets, which in many cases as many or only one more than the common name.

Her second reason for advocating the use of common names was that amateurs at nature centers are often forced to make up their own common names since none exist or they are not aware of them. As I asked before, what common name should be used? The uncontrolled publication of common names leads to chaos. Trying to regulate the use of common names would be nearly impossible. Even though the Code of Botanical Nomenclature, by which the application of scientific names is governed, is conservative and carefully refined over the years, it can still be frustrating to use. I cannot imagine that a Code of Common Names would be much better.

The third reason given is that elementary children find it difficult to use scientific names and that common names often point out some obvious morphological character by which one can easily recognize the species. I found most of the names published by Li and Glime not descriptive of the species and resorted to creating my own names. I also find it hard to believe that elementary children would study this genus in such detail that it would require them to know different species!

The fourth reason for advocating common names is that common names often teach the Latin and Greek meanings of the scientific names. I do not find this to be true.

Finally, Glime argues that publishers of amateur books on mosses insist on common names. I can address this from direct experience. I am having a field guide to *Sphagnum* published in 1990 by the University of New England Press. The book, using a combination of macroscopic keys and color plates, will permit amateurs and professional botanists to identify the more common species in the field without use of a microscope. The editors never required me to use common names, in spite of the fact that this book is written primarily for amateurs.

The basic reason given for justifying the use of common names is the belief that scientific names contain more syllables and are consequently more difficult to spell and pronounce. I would disagree with this argument for a number of reasons. First, the use of common names is restricted to the people of one language. Such a practice results in more chaos than order due to the language barrier. Secondly, without any rules to govern the formation of common names, literally any name is acceptable and there is no way to justify the use of one name over another one. Again this results in more chaos than order. Thirdly, scientific names indicate generic and usually genetic relationships, common names do not indicate any sort of relationship among species. Scientific names on the other hand are international in their scope and precise in their meaning.

The difference in the number of syllables of scientific names versus common names is not as great as one might think. The average number of syllables for the scientific names discussed in this paper is 5.8, whereas the average number of syllables for the common names is 4.6. Even though the average scientific name is longer, the difference is a little more than one syllable!

In conclusion, I do not believe that common names are very useful for species in the genus *Sphagnum*. The creation of common names for species that are largely unknown to most people will not make them any more accessible. In fact, I believe it will lead to more confusion than understanding.

Literature Cited

Crum, H. 1984. Sphagnopsida. *Sphagnaceae*. North American Flora., Series II, Part 11. New York Botanical Garden, Bronx, NY.

Glime, J.M. 1989. Should mosses have common names?. Evansia 6: 1-6.

Li, Y. and J.M. Glime. 1989. Sould mosses have common names? Part 2. The common names of *Sphagnum*. Evansia 6: 25-27.

McQueen, C.B. 1989. A biosystematic study of *Sphagnum capillifolium* sensu lato. The Bryologist 90: 1-24.

Wu, P.D., J.X. Luo, M.Z. Wang, et al. 1984. A glossary of terms and names of bryophytes. (in Chinese). Science Publisher, Beijing, China.

Reply to McQueen -- Bob Magill has asked me to respond to the comments by Cyrus McQueen regarding the article by Li and Glime on common names of Sphagnum. I agree almost totally with the arguments of McQueen. In fact, the only disagreement I have is with his apparent interpretation of my own position on the topic. **I do not** advocate the creation of additional common names to fill voids or improve upon existing names. In fact, I am publishing these lists in an attempt to avoid that. The names being published here are not the only ones in existence, and I am updating my list constantly through reader contributions and in some cases translations of foreign names. My intention is to place into one list the names currently in use from which those people in English-speaking countries who feel forced to use common names may draw upon names. These people will include authors of books when publishers absolutely insist on common names, nature center workers where the participating public insist on them, and to a lesser degree when teaching children. It is my experience that children are easier to teach using scientific names than are adults. While I find it more difficult to remember common names, I also find it difficult for adults who are not biologists to remember scientific names, at least when they are beginning. Most young adults today are unable to read phonetically, and therefore, they find the scientific names intractable until they have a teacher to help them. I find that once they have learned to recognize a few plants, bryophytes included, and name them with common names, they are more willing to expend the effort to learn the scientific names.

Janice M. Glime

Three Mosses New to Mississippi

William D. Reese[1]

The three species listed below, collected in Claiborne County along or near the Natchez Trace Parkway, are new to Mississippi. Voucher specimens are in LAF.

Barbula fallax Hedw.--Along road from MS Rte. 552 to Windsor Battlefield (ca. 5 mi. N from 552); ca. 30 mi. NE of Natchez; on vertical loess bank of roadcut, *Reese 17477pp*. (with *Weissia jamaicensis*).

Eucladium verticillatum (Brid.) B.S.G.--Owens Creek Waterfall along Natchez Trace Parkway at mile 52; clear stream in mixed forest; abundant on seeping rock under the waterfall, *Reese 17478*.

Weissia jamaicensis (Mitt.) Grout--Same locality cited for Barbula fallax, above, *Reese 17477pp*. (with *Barbula fallax*).

---

[1] Department of Biology, Box 42451, University of Southwestern Louisiana, Lafayette, LA 70504-2451

Sphagnum angermanicum in Central Quebec

Norman Dignard[1] & Denis Bastien[2]

Abstract. Sphagnum angermanicum *Melin was recently collected north of Quebec City. This discovery is a significant range extension for the species in North America. Its North American distribution is mapped.*

Since Melin's description of the type in 1919, the oceanic amphiatlantic *Sphagnum angermanicum* has been recorded in Europe from southern Norway (Flatberg & Moen 1972) to central Sweden (Eriksson 1972, Maass 1965, Sjørs 1966). It was also observed in Belgium (De Zuttere 1974) and Spain (Casas Sicart 1981).

Maass (1966, 1967) first studied the North American distribution of *S. angermanicum* and reported the species from coastal lowlands under 450 m from Newfoundland south to New Jersey, with three outposts in central New Brunswick, southern Labrador, and Quebec, on the north shore of the Gulf of St. Lawrence. Holcombe (1979) found an isolated population in the White Mountains of New Hampshire at an elevation of 850 m. Five other localities were later reported from eastern Canada by Lavoie & Gauthier (1983): four on the north shore of the St. Lawrence, in Quebec (the westernmost at Ilêts-Jérémie, 48°51'N - 68°42'W), and one in Labrador, 175 km from the sea. Recent studies (Belland 1987 and Belland & Favreau 1988) were unable to confirm its occurrence in the Gaspé Peninsula and on Anticosti Island. The taxon is known neither from Magdalen Islands (Gauthier, pers. comm.) nor from St. Pierre and Miquelon (Etcheberry *et al*. 1987) despite the numerous oceanic species recorded in this archipelago and its presence on Burin Peninsula in nearby Newfoundland. All the American localities of the species are rather poor boggy fens except the New Hampshire station which appears to be more acidic. This station is the only one over the 450 m altitude limit observed by Maass (1966).

The new locality here reported is situated near Tewksbury (47°08'N-71°26'W), 35 km north of Quebec City (Fig. 1) at an altitude of 440 m. *Sphagnum angermanicum* was found in a narrow fen along the wet shore of a cold, acid pond, only a few metres from open water. The shoreline vegetation is dominated by *Myrica gale, Chamaedaphne calyculata, Alnus rugosa* and *Carex aquatilis. Sphagnum angermanicum* grows in small, loose clumps among colonies of *S. fallax* and *S. magellanicum*. Other associated species include *Drepanocladus revolvens, S. majus* and *S. russowii*. A sample of the mesic peat, taken at a depth of 20 cm, showed a pH

[1] Herbier du Québec, 2700 Einstein, Sainte-Foy (Québec), Canada G1P 3W8
[2] 520, One-Onti Village-Huron (Québec), Canada G0A 4V0

value of 3.2 ($CaCl_2$ 0.1 N). This habitat is quite similar to those in which the species was collected elsewhere in North America. The plants we saw were rather slender and yellowish. However, as Crum (1984) stated, they can be also tinged with pink or purplish-red. Several features help field recognition, particularly the large apical bud, the flattened capitular branches and the large lingulate stem leaves which are rounded-truncate and toothed at the apex. An excellent plate of figures can be found in Crum (1984).

This new locality brings the limit of *S. angermanicum* more than 200 km westward from Ilêts-Jérémie and is the most continental station in North America. Whether it is a disjunct outpost of the species or belongs within its range is questionable because the moss flora of the north shore of the St. Lawrence, particularly east of the Saguenay River, is poorly known. We think however that further investigations may reveal a continuous distribution of *S. angermanicum* along the St. Laurence estuary to the limit of freshwater.

Vouchers specimens are deposited in CANM, QFA and QUE.

Acknowledgments. We thank Drs. Robert Gauthier, Richard E. Andrus and an anonymous reviewer for comments on this manuscript and Robert R. Ireland for confirming the identification.

Literature Cited

Belland, R.J., 1987. The moss flora of the Gulf of St. Lawrence region. Ecology and phytogeography. Journal of the Hattori Botanical Laboratory 62: 205-267.

Belland, J. R. & M. Favreau, 1988. The moss flora of the Gaspé Peninsula (Québec, Canada): list of species and preliminary analysis. Canadian Journal of Botany 66: 1780-1799.

Casas Sicart, C., 1981. The mosses of Spain. An annotated check-list. Treballs de l'Institut Botànic de Barcelona 7: 1-57.

Crum, H., 1984. *Sphagnopsida, Sphagnaceae*. North American Flora, Series II, part 11: 1-180.

De Zuttere, P., 1974. Les sphaignes de Belgique. Réflexions sur la systématique du genre *Sphagnum* L. Clé de détermination et petit prodrôme de la flore des sphaignes de Belgique. Naturalistes Belges 55: 258-282.

Eriksson, P.A., 1972. *Sphagnum angermanicum* junnen i vastra Dalarna ah i ostra Varmland. Svensk Botanisk Tidskrift 66: 136-138.

Etcheberry, R., D. Abraham, G.R. Brassard & M. Favreau, 1987. Les mousses des îles St-Pierre-et-Miquelon. Canadian Journal of Botany 65: 879-887.

Flatberg, K.I. & A. Moen, 1972. *Sphagnum angermanicum* and *S. molle* in Norway.

Kongelige Norske Videnskabers Selskab Skrifter 3: 1-15.

Holcombe, J.W., 1979. *Sphagnum angermanicum* in New Hampshire. The Bryologist 82: 616-618.

Lavoie, G. & R. Gauthier, 1983. Précisions sur la distribution de *Sphagnum angermanicum* Melin et *Sphagnum pylaesii* Bridel au Québec-Labrador. Naturaliste Canadien 110: 421-427.

Maass, W.S.G., 1965. Zur Kenntnis des *Sphagnum angermanicum* in Europe. Svensk Botanisk Tidskrift 59: 332-344.

___________, 1966. Studies on the taxonomy and distribution of *Sphagnum* I. *Sphagnum pylaesii* and *Sphagnum angermanicum* in Quebec and some phytogeographic considerations. The Bryologist 69: 95-100.

___________, 1967. Studies on the taxonomy and distribution of *Sphagnum* II. *Sphagnum angermanicum* Melin in North America and its relation to allied species. Nova Hedwigia 13: 449-467.

Sjørs, H., 1966. *Sphagnum angermanicum* found in northern Dalarna, Sweden. Botaniska Notiser 119: 361-364.

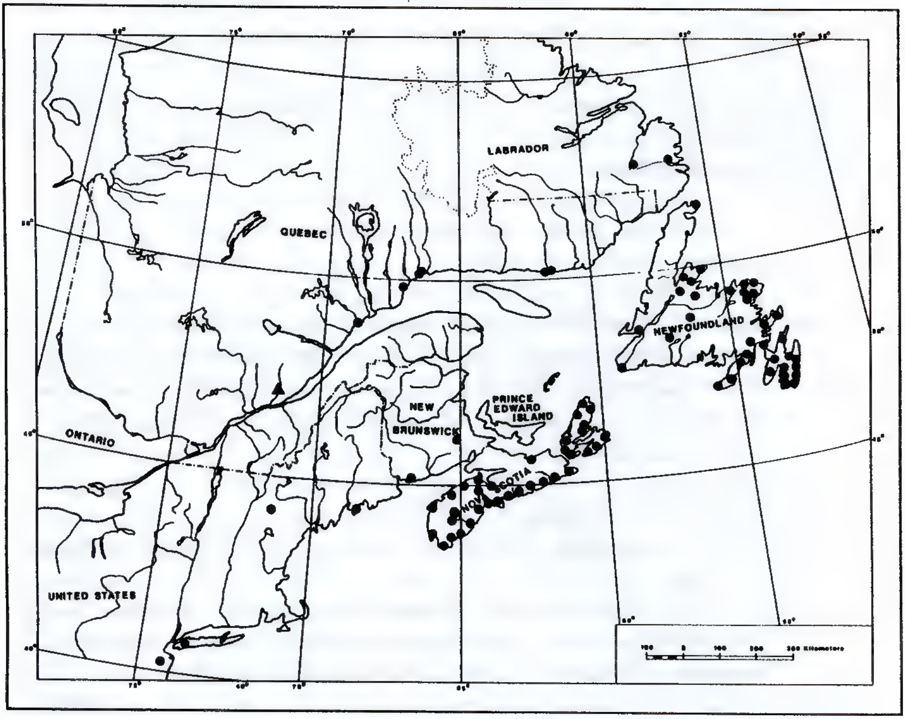


Figure 1. Distribution of *Sphagnum angermanicum* in North America (expanded from Holcombe 1979 and Lavoie & Gauthier 1983). Triangle shows the new locality.

The Distribution of North American Bryophytes
Seligeria donniana (Sm.) C. Muell.

Dale H. Vitt[1]

Seligeria donniana is one of 13 species of the genus in North America. This genus, along with the genus *Blindia* with about 16 species in the world, are members of the family Seligeriaceae (Bartlett & Vitt 1986). Species of *Seligeria* are among the smallest of all non-ephemeral mosses. The plants generally consist of a few leaves and terminal sporophyte about 2-3 mm high. The plants are perennials that grow as individuals or form thin mats in crevices of calcareous cliffs. In tundra habitats, they are sometimes firmly attached to small stones in depressions. The preferences for calcareous substrates is a feature characteristic of the genus.

Seligeria donniana is differentiated by being the only species of the genus that totally lacks a peristome. The capsules are noticeably undersized and sit on a slender, erect seta. When mature the capsules are globose, but when old, the urns have a flaring mouth and turbinate shape. Also characteristic of this species are leaf margins that are serrulate, this is especially evident where the leaves narrow to the subula. All other species of the genus (as well as *Blindia acuta*) have entire leaf margins. Further details on its differentiation and relationships are present in Vitt (1976).

When I mapped the North American distribution of this species (Vitt 1976), only nine localities were known from western North America. Since then quite a few more collections have been made, extending the distribution southward and eastward.

The North American distribution of *Seligeria donniana* is bicentric. In the east, it is known from Newfoundland, the Gaspe Peninsula, and northern New Brunswick, seemingly disjunct southward in southern Quebec, southern Ontario, Michigan, New York, New Jersey, Pennsylvania, Ohio, and Tennessee. Disjunct stations are also known from southeastern Missouri and northeastern Iowa. At the Iowa stations, it is a characteristic species of the algific slopes where calcareous cliffs are bathed in cold air drainage. In the west, the species has been found from the central Yukon and extreme southwestern Northwest Territories southward in the Rocky Mountains of British Columbia and Alberta to northern Montana. It is also known from the Queen Charlotte Islands, Vancouver Island, and western Washington. In the west, it often is found with *Seligeria tristichoides*.

---

[1] **Department of Botany, The University of Alberta, Edmonton, Alberta, Canada, T6G 2E9.**

As with *Isopterygiopsis muelleriana*, this species has two centers of distribution in North America. Western populations of *S. donniana* are restricted to the calcareous substrates associated with the western cordillera, mostly along the proposed ice-free corridor (Horton 1982), or near or in Beringia. The eastern populations are mostly found south of the maximum extent of Wisconsinan glaciation, and may be largely restricted to sites where this species weathered the glacial advances. The Newfoundland populations may also indicate possible refugia along the west coast of the Island (Belland 1987).

Additional reports, new collections, and range extensions should be sent to the author. These new findings can be reported in the future editions of this series.

NEXT SPECIES: *Sphagnum imbricatum* Russ. and its relatives.

Literature Cited

Bartlett, J. K. and D. H. Vitt. 1986. A survey of species in the genus *Blindia* (Bryopsida, Seligeriaceae). New Zealand Jour. Bot. 24: 203-246.

Belland, R. J. 1987. The moss flora of the Gulf of St. Lawrence Region: Ecology and phytogeography. Jour. Hattori Bot. Lab. 62: 205-267.

Horton, D. G. 1982. The status and significance, relative to refugial theory, of bryofloristic research in western Canada. Beih. Nova Hedwigia 71: 435-449.

Vitt, D. H. 1976. The genus *Seligeria* in North America. Lindbergia 3: 241-275.

Syrrhopodon texanus Sull. New to Delaware

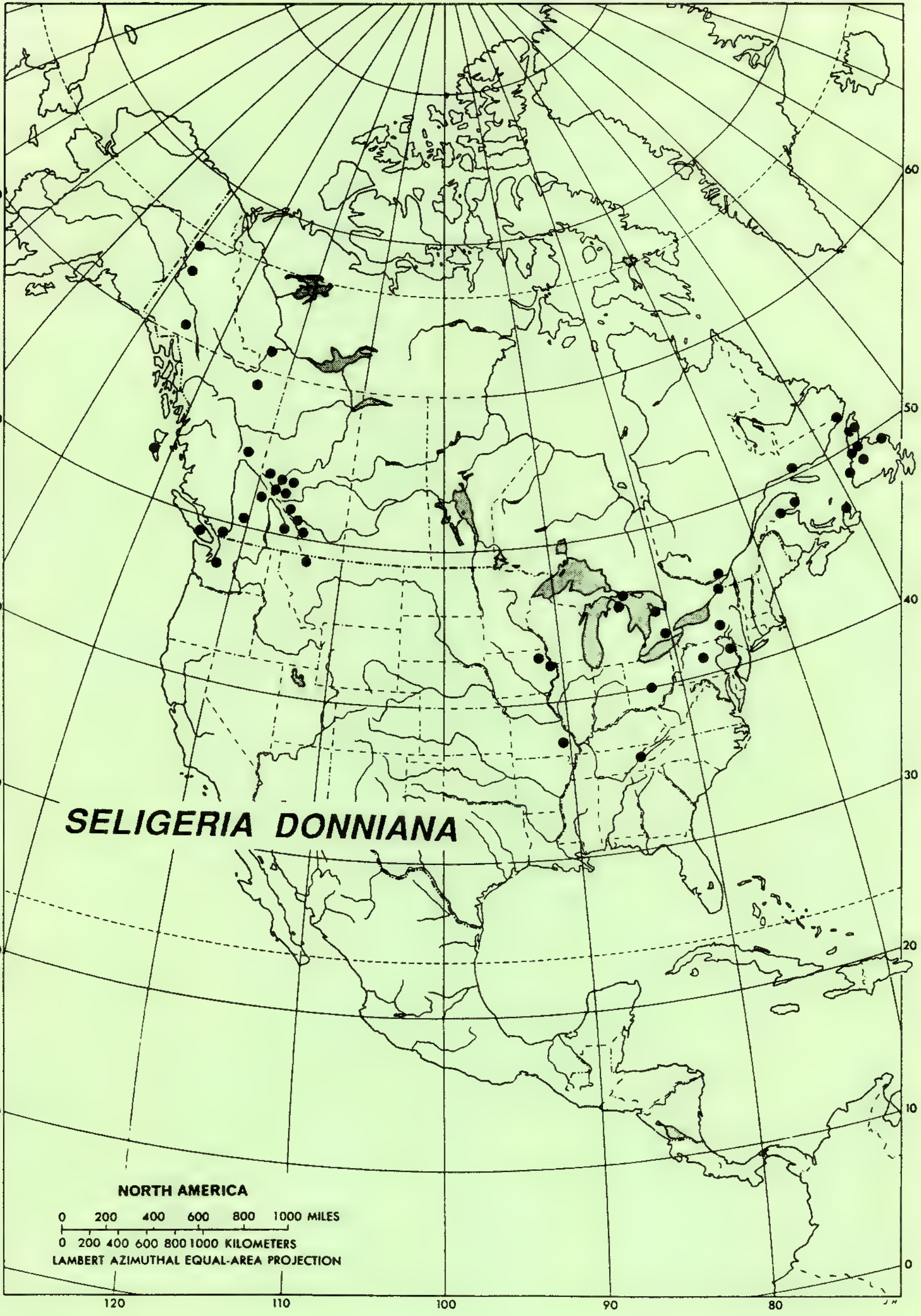
Bruce Allen[1]

Syrrhopodon texanus Sull., an eastern North America endemic is reported for the first time in Delaware. This station is the farthest north in the eastern Coastal Plain (aside from a historical record of the species on Long Island) that the species has been found (see Reese, The Bryologist 87: 217-222, 1984). The Delaware station for this moss is in the area of the natural, northern limit of *Taxodium distichum* (L.) Rich. along the eastern Coastal Plain.

Syrrhopodon texanus Sull. -- Sussex County; Trussum Pond, ca 2 mi ESE of Pepper, base of Bald Cypress *Allen 9178, 9192* (MO).

[1] Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299

New York Botanical Garden Library
3 5185 00349 6187



SELIGERIA DONNIANA

170
180
170
160
140
100
60
60
50
40
30
20
10
0
120
110
100
90
80
NORTH AMERICA
0 200 400 600 800 1000 MILES
0 200 400 600 800 1000 KILOMETERS
LAMBERT AZIMUTHAL EQUAL-AREA PROJECTION
J.H.

EVANSIA
The Missouri Botanical Garden
P.O. Box 299
St. Louis, MO 63166-0299 USA

Luesther T Mertz
LIBRARY
MAY 2 4 2000
NEW YORK
BOTANICAL GARDEN

XE
v 7
#3

EVANSIA

Volume 7 Number 3

Should mosses have common names? Part 4. The Dicranales

Janice M. Glime & Jinkun Zhang - 41

Bryophytes from the Old Quebec City walls, Canada

Norman Dignard - 47

A new synonym of *Fissidens papillosus*

R. A. Pursell, M. A. Bruggeman-Nannenga & Z. Iwatsuki - 48

Contribution to the Knowledge of the Lichen Flora of Hagemeister Island, Bering Sea, Alaksa

Stephen S. Talbot, Sandra Looman Talbot, & John W. Thomson - 49

Checklist of Bryophytes of Churchill, Manitoba, Canada

Peter A. Scott - 54

A Third Record for Tortella flavovirens on the Northern Gulf Coast

William D. Reese - 60

© December, 1990, by the American Bryological and Lichenological Society

Editor:

Robert E. Magill
Department of Bryology
Missouri Botanical Garden
P.O. Box 299
St. Louis, MO 63166-0299
U.S.A.

ISSN 0747-9859

Evansia volume 7, number 2 was mailed on 15 September 1990

Should mosses have common names? Part 4. The Dicranales

Janice M. Glime & Jinkun Zhang[1]

The Dicranales have many common names that would seem to us to serve little purpose. They are long, descriptive names that are more difficult than their shorter scientific originals, such as the Japanese name of "false white hair moss with thick costa" for *Paraleucobryum enerve*.

Nevertheless, many interesting and short descriptive names can be found among this group. Among the more widely used ones are green hair moss for *Dicranella heteromalla* and cow hair moss for *Ditrichum*. *Bruchia* is called the small candle moss in China because of its resemblance to temple candles. Electric eels for *Dicranum undulatum* certainly relates to the undulate surface. The names of rake moss and broom moss refer to the swept appearance of *Dichodontium* and *Dicranum*, respectively. The miscanthus moss, *Dicranella*, is named for a tall grass that is used for making roofs in Japan because of the ability of the grass to last up to 50 years without replacement.

Several of the mosses have names that describe their habitats, such as the Japanese name of wet rock moss for *Dichodontium pellucidum*, and the Chinese name of rock crevice moss for *Saelania*. However, I (Glime) prefer the Japanese name of blue moss, used for *S. glaucescens*. In North America, the name of red roof moss for *Ceratodon* seems somewhat strange, for this moss is not so common on asphalt roofs, but is quite common on both grass and tile roofs in Japan. (We prefer the name of dinosaur moss, given this moss by our nine-year-old friend because its generic name reminded her of dinosaur names, but no new names need be added to the common name confusion.)

The Chinese names used in this paper have been translated from Wu *et al.* (1984), who followed the first systematic treatment of Chinese mosses by Chen *et al.* (1963, 1978). Conventions in formatting follow Glime (1989). The **meaning** of the scientific name, as supplied by Elizabeth Dunham, is provided immediately after the scientific name. The structure to which the name applies is in parentheses. Nomenclature follows that being prepared by Howard Crum and Louis Anderson for a new North American checklist (in press).

---

[1] Department of Biological Sciences, Michigan Technological University, Houghton, Michigan 49931

Arctoa: yellow tail moss[13]; arctic moss[14]

Arctoa fulvella (Dicks.) B.S.G.: tawny fork moss[8]; yellow tail moss[13]; common arctic moss[14]

Blindia: ko-shippo-goke = small tail moss[13]; small-fringe moss[14]

Blindia acuta (Hedw.) B.S.G.: sharp-pointed weissia[8]; silky tufted moss[11]; karano-ko-shippo-goke = Chinese [13]; common small-fringe moss[14]

Brachydontium trichodes (Web.) Milde: bristle-leaved weissia[8]; bristle-leaved moss[11]

Brothera: white-leafed moss[14]

Brothera leana (Sull.) C. Muell.: boar moss[13]; common white-leafed moss[14]

Bruchia: pygmy mosses[2]; Bruch's moss[13]; small candle moss[14]; brownies[17]

Bruchia vogesiaca Nestl. ex Schwaegr.: common small candle moss[14]

Campylopus: fish hook moss[13]; crooked-stork moss[14]

Campylopus atrovirens De Not.: black fish hook moss[13]

Campylopus flexuosus (Hedw.) Brid.: rusty swan-neck moss[11]; common crooked-stork moss[14]

Campylopus fragilis (Brid.) B.S.G.: zigzag fork moss[8]; brittle swan-neck moss[11]; eyebrow brush moss[13]; fragile crooked-stork moss[14]

Campylopus pilifer Brid.: polytrichum-like swan-neck moss[11]

Campylopus schwarzii Schimp.: Schwarz's swan-neck moss[11]

Ceratodon: horn tooth (peristome)[9]; ceratodon[1]; purple fork moss[11]; red roof moss[13]; horn-tooth moss[14]

Ceratodon purpureus (Hedw.) Brid.: ceratodon[1]; purple horn-toothed moss[2, 4, 17]; burned ground moss[3]; purple horntooth[5]; purple-fruiting heath moss[7]; purple didymodon[8]; purple fork moss[11, 20]; red roof moss[13]; common horn-tooth moss[14]

Ceratodon stenocarpus B.S.G.: papillose-capsule horn-tooth moss[14]

Cnestrum glaucescens (Lindb. & Arn.) Holm. ex Mog. & Steere: glaucous didymodon[8]

Cynodontium: dogtooth moss[13, 14]

Cynodontium glaucescens (Lindb. & Arn.) Par.: glaucous didymodon[8]

Cynodontium polycarpum (Hedw.) Schimp.: many-fruited fork moss[11]; common dogtooth moss[14]

Dichodontium: rake moss[13]; split-teeth moss[14]

Dichodontium pellucidum (Hedw.) Schimp.: pellucid fork moss[8]; transparent fork moss[11]; wet rock moss[13]; common split-teeth moss[14]

Dicranella: little dicranum[9]; little fork mosses[2, 4]; miscanthus moss[13]; small-curved-tail moss[14]

Dicranella cerviculata (Hedw.) Schimp.: red-necked fork moss[8]; spur-necked fork moss[11]

Dicranella crispa (Hedw.) Schimp.: curl-leaved fork moss[8, 11]

Dicranella grevilleana (Brid.) Schimp.: Greville's fork moss[11]; common small-curved-

tail moss[14]
Dicranella heteromalla (Hedw.) Schimp.: common dicranella[1]; green hair moss[2]; silky fork moss[3,7]; silky-leaved fork moss[8,11];variable small-curved-tail moss[14]
Dicranella palustris (Dicks.) Crundw. ex Warb.: drooping-leaved fork moss[8,11]; wide-leafed miscanthus moss[13]; marsh fork-moss[20]
Dicranella rufescens (With.) Schimp.: red fork moss[11]
Dicranella schreberiana (Hedw.) Hilf. ex Crum & Anderson: Schreberian fork moss[8]; sheath-leaved fork moss[11]
Dicranella subulata (Hedw.) Schimp.: awl-leaved fork moss[8,11]; inclined small-curved-tail moss[14]
Dicranella varia (Hedw.) Schimp.: variable fork moss[8,11]
Dicranodontium: bow moss[13]; green-hair moss[14]
Dicranodontium denudatum (Brid.) Britt. in Williams: bow moss[13]; common green-hair moss[14]
Dicranodontium uncinatum (Harv. in Hook.) Jaeg.: hook-leafed green-hair moss[14]
Dicranoweisia: rolled-hair moss[14]; bent-leaved weisia[20]
Dicranoweisia cirrata (Hedw.) Lindb. ex Milde: Weis dicranum[5]; curly thatch moss[7]; curl-leaved weissia[8]; bent-leaved weissia[11]; fine rolled-leaf moss[14]
Dicranoweisia crispula (Hedw.) Lindb. ex Milde: Weis dicranum[5]; curly-leaved weissia[11]; common rolled-leaf moss[14]
Dicranum: two-pronged fork (peristome) moss[9]; fork mosses[2,4,10]; tail moss[13], curved-tail moss[14]; broom moss, fork moss[16]
Dicranum bonjeanii De Not. in Lisa: thin-rib curved-tail moss[14]
Dicranum elongatum Schleich. ex Schwaegr.: long forked moss[11]; long-leaf curved-tail moss[14]
Dicranum flagellare Hedw.: flagellate dicranum[1]; whip fork moss[2]; whip fork-moss[4]; upright-fruited fork moss[8]; flagellate fork moss[11]; delicate hair tie moss[13]
Dicranum fulvum Hook.: fulvous dicranum[1]; fine-leaf curved-tail moss[14]
Dicranum fuscescens Turn.: fuscous moss[1]; curly heron's bill moss[5]; dusky fork moss[11]; brown tail moss[13]; brown curved-tail moss[14]
Dicranum groenlandicum Brid.: Greenland curved-tail moss[14]
Dicranum majus Sm.: greater fork moss[7]; great fork moss[11]; Kurile Island tail moss[13]; multi-capsule curved-tail moss[14]
Dicranum montanum Hedw.: mountain fork moss[11]
Dicranum muehlenbeckii B.S.G.: thin-leaf curved-tail moss[14]
Dicranum pallidisetum (Bail. in Holz.) Irel.: alpine curly heron's bill moss[5]
Dicranum polysetum Sw.: wavy dicranum[1]; wavy broom moss[3]; wavy tail moss[13]; wavy-leaf curved-tail moss[14]
Dicranum scoparium Hedw.: broom moss[1,2,3,4,5,6,10,17]; lesser fork moss[7]; broom fork moss[8,20]; brown fork moss[11]; hair tie moss[13]; common curved-tail moss[14]
Dicranum spurium Hedw.: rusty fork moss[11]
Dicranum tauricum Sap.: broken-leaf moss[5]; broken-leaf curved-tail moss[14]

Dicranum undulatum Brid.: wavy dicranum[1]; wavy broom moss[2]; waved-leaved fork moss[8]; wrinkle-leaf curved-tail moss[14]; electric eels[21]

Distichium: double row (of leaves)[9]; hair golden thread moss[13]; opposite-leafed moss[14]

Distichium inclinatum (Hedw.) B.S.G.: inclined-fruited didymodon[8]; oblique-fruited flat moss[11]; inclined-capsule opposite-leafed moss[14]

Ditrichum: two hair (divided peristome tooth) moss[9]; golden thread moss[13]; cow-hair moss[14]

Ditrichum flexicaule (Schwaegr.) Hampe: slender-stemmed hair moss[11]; fine-leaf cow-hair moss[14]

Ditrichum heteromallum (Hedw.) Britt.: curved-leaved didymodon[8]; common cow-hair moss[14]

Ditrichum pallidum (Hedw.) Hampe: yellow ditrichum[1]; golden thread moss[13]; yellow cow-hair moss[14]

Ditrichum pusillum (Hedw.) Hampe: brown ditrichum[1]; dwarf didymodon[8]; twisted-leaved hair moss[11]; thin-leaf cow-hair moss[14]

Kiaeria: orthodicranum-like moss[14]

Kiaeria blyttii (Schimp.) Broth.: Blytt's fork moss[8]; dull fork moss[11]; Blytt's orthodicranum-like moss[14]

Kiaeria falcata (Hedw.) Hag.: sickle-leaved fork moss[8, 11]; sickle orthodicranum-like moss[14]

Kiaeria starkei (Web. & Mohr.) Hag.: alpine broom moss[5]; Starkian fork moss[8]; Stark's fork moss[11]

Leucobryum: white moss[4, 9, 10]; pin cushion moss[10]; white fork moss[11]; white hair moss[13, 14]; white-moss[17]

Leucobryum glaucum (Hedw.) Aongstr. in Fr.: white moss[1, 2, 9, 16]; cushion moss[2, 6, 16]; white cushion moss[3]; common white moss[4]; moss, white fork moss[7, 8, 11]; common white-hair moss[14]

Octoblepharum: eight-toothed moss[14]

Octoblepharum albidum Hedw.: eight-toothed white moss[4, 12]; common eight-toothed moss[14]

Oncophorus: something puffed out (base of capsule)[9]; bump moss[13]; curved-back moss[14]

Oncophorus virens (Hedw.) Brid.: green spur-fruited fork moss[8, 11]; common curved-back moss[14]

Oncophorus wahlenbergii Brid.: Hokkaido bump moss[13]; mountain curved-back moss[14]

Paraleucobryum: long-leafed tail moss[13]; Leucobryum-like moss[14]

Paraleucobryum enerve (Thed. in Hartm.) Loeske: false white hair moss with thick costa[13]

Paraleucobryum longifolium (Hedw.) Loeske: long-leaved fork moss[11]; long-leafed tail moss[13]; long-leaf Leucobryum-like moss[14]

Pleuridium: pygmy mosses[2]; purse moss[13]; dense-hairy moss[14]; brownies[17]

Pleuridium acuminatum Lindb.: pointed-leaf dense-hairy moss[14]

Pleuridium subulatum (Hedw.) Rabenh.: common pleuridium[1]; common pygmy moss[2]; awl-leaved earth moss[11]; narrow leafed purse moss[13]; common dense-hairy moss[14]

Rhabdoweisia: streak moss[11]; eight-ribbed moss[13]; coarse-rock moss[14]

Rhabdoweisia crispata (With.) Lindb.: tooth-leaved streak moss[11]; small-teeth coarse-rock moss[14]

Saelania: rock-crevice moss[14]

Saelania glaucescens (Hedw.) Broth. in Bom. & Broth.: for Saelan of Scandinavia[9]; glaucous hair moss[11]; blue moss[13]; common rock-crevice moss[14]

Seligeria: bristle moss[11]; silk tail moss[13]; fine-leaf moss[14]

Seligeria calcarea (Hedw.) B.S.G.: chalk weissia[8]; chalk bristle moss[11]

Seligeria donniana (Sm.) C. Muell.: Donian beardless moss[8]; fringeless bristle moss[11]

Seligeria pusilla (Hedw.) B.S.G.: dwarf weissia[8], smallest bristle moss[11]; small silk tail moss[13]; common fine-leaf moss[14]

Seligeria recurvata (Hedw.) B.S.G.: recurved weissia[8]; curve-necked bristle moss[11]

Symblepharis: joined-eyelash moss[14]

Trematodon: perforated tooth (of peristome)[9]; long-necked mosses[1, 2]; long base moss[13]; long-capsule moss[14]

Trematodon ambiguus (Hedw.) Hornsch.: northern long-necked moss[1]; golden thread long base moss[13]; northern long-capsule moss[14]

Trematodon longicollis Michx.: bow-base moss (as in bow & arrow)[13]; common long-capsule moss[14]

Trichodon: hairy-teeth moss[14]

Trichodon cylindricus (Hedw.) Schimp.: narrow-fruited fork moss[11]; common hairy-teeth moss[14]

---

[1] Grout, A. J. 1900. *Mosses with a hand-lens*. Press of Binghampton Republican, New York, 74 Pp.; Grout, A. J. 1903. *Mosses with a handlens and microscope*. By Author. N. Y.

[2] Bland, J. 1971. *Forests of Lilliput*. Prentice-Hall, Inc., Englewood Cliffs. 210 Pp.

[3] Shuttleworth, F. S. and H. S. Zim. 1967. *Non-flowering plants. Ferns, mosses, lichens, mushrooms and other fungi*. A Golden Nature Guide, Golden Press, N.Y. 160 Pp.

[4] Marshall, N. L. 1907. *Mosses and lichens*. Doubleday, Page, & Co., N. Y. 327 Pp.

[5] Harthill, M. P. and I. O'Connor. 1975. *Common mosses of the Pacific coast.* Naturegraph.

[6] Welch, W. H. 1957. *Mosses of Indiana. An illustrated manual*. The Bookwalter Company, Indianapolis. 478 Pp.

[7] Jewell, A. L. 1955. *The observer's book of mosses and liverworts*. Frederick Warne and Co. Ltd., N. Y.

[8] Stark, R. M. 1860. *A popular history of British mosses, 2nd edition*. Routledge, Warne, & Routledge, London (Wheldon & Wesley), 348 Pp.

[9] Dunham, E. M. 1951. *How to know the mosses*. The Mosher Press, Boston.

[10] Crum, H. 1976. *Mosses of the Great Lakes forest*, revised edition. Univ. Mich. 10: 1-404.

[11] Tripp, F. E. 1888. *British mosses, their homes, aspects, structure and uses*. George Bell & Sons, Covent Garden, London (Wheldon & Wesley), 2 Vol.

[12] Johnson, A. 1980. *Mosses of Singapore and Malaysia*. Singapore University Press, Singapore, 126 Pp.

[13] Dr. Zen Iwatsuki (personal communication)

[14] Jinkun Zhang (translated from Wu et al., 1984)

[15] Wu, P. C., J. X. Luo, M. Z. Wang, et al. 1984. *A glossary of terms and names of bryophytes*. (in Chinese). Science Press, Beijing, China.

[16] Thomas, L. P. and J. R. Jackson. 1985. *Walk softly upon the earth. A pictorial guide to Missouri mosses, liverworts and lichens*. Missouri Department of Conservation, Jefferson City, 129 pp.

[17] Britton, E. G. 1900. *Mosses*. Nature Study Leaflets, Natural Science Committee of the Associate Alumnae of the Normal College, New York City 4: 1-9.

[20] Russell, T. H. 1910. *Mosses and liverworts. An introduction to their study, with hints as to their collection and preservation*. Sampson Low, Marston & Co., LD. 211 Pp., 10 plates.

[21] Vitt, D. H., J. E. Marsh, and R. B. Bovey. 1988. *Mosses, lichens & ferns of northwest North America*. Lone Pine Publishing, Edmonton, Alberta, Can. 296 Pp.

Literature Cited

Chen, P. C., Wan, T.-L., Gao, C., Li, X.-J., and Wu, P.-C. (eds.) 1963. *Genera Muscorum Sinicorum, Pars Prima*. Science Press, Peking.

———, ———, ———, ———, ———, Lo, C.-H., Kuo, M.-S., and Shih, W.-C. (eds.). 1978. *Genera Muscorum Sinicorum, Pars Secunda*. Science Press, Peking.

Glime, J. M. 1989. Should mosses have common names? *Evansia* 6(1):1-6.

Bryophytes from the Old Quebec City walls, Canada

Norman Dignard[1]

Although air pollution affects seriously the abundance and the diversity of the bryophyte flora in urbanized areas, progressive disappearance of adequate habitats is also responsible of its paucity. In the last twenty-five years, many of the Old Quebec City stone structures have undergone important restauration to save them from ruin or even collapse. This, however, resulted in destruction of many types of habitats: slate roofs, limestone walls, decaying wooden beams, cobblestone courtyards, old concrete pillars, etc. Several short visits were made in the past three years to collect bryophytes on those structures. Thirty-four mosses and six hepatics, many of them not usual in such urban habitats, were collected. In general, richness and diversity is higher : 1) with increasing distance from the major pollution sources in the vicinity, being a pulp and paper mill and the adjacent municipal incinerator and 2) with the age of the structures themselves. In the same way, the number of air pollution sensitive species increased. *Bryum argenteum*, *Ceratodon purpureus*, *Funaria hygrometrica* and *Leptobryum pyriforme*, were fairly abundant where pollution was susceptible to attain higher levels while *Bryoeythrophyllum recurvirostrum*, *Dicranella cerviculata* and *Rhacomitrium canescens* where thriving faraway from the major pollution sources. All the recorded taxa except *Frullania tamarisci* subsp. *asagrayana*, endemic of eastern North America, have circumhemispheric distributions and many, as expected, are cosmopolitan and ubiquitous. Among mosses, acrocarps species are far more abundant than pleurocarps. Species are listed in three groups related to their frequency which was estimated on the basis of the number of collections and observations. Nomenclature follows Ireland *et al.* (1987) and Stotler and Crandall-Stotler (1977). Voucher specimens are deposited in QUE.

Common species: *Bryum argenteum* Hedw., *Bryum lisae* var. *cuspidatum* (B.S.G.) Marg., *Ceratodon purpureus* (Hedw.) Brid., *Funaria hygrometrica* Hedw., *Leptobryum pyriforme* (Hedw.) Wils.

Uncommon species: *Barbula unguiculata* Hedw., *Bryoerythrophyllum recurvirostrum* (Hedw.) Chen, *Bryum caespiticium* Hedw., *Desmatodon obtusifolius* (Schwaegr.) Schimp., *Dicranella cerviculata* (Hedw.) Schimp., *Pohlia nutans* (Hedw.) Lindb., *Rhacomitrium canescens* (Hedw.) Brid., *Schistidium apocarpum* (Hedw.) B. & S. *in* B.S.G.

Rare species: *Amblystegium serpens* (Hedw.) B.S.G., *Andraea rupestris* Hedw., *Anomodon rugelii* (C. Müll.) Keissl., *Brachythecium campestre* (C. Müll.) B.S.G.,

---

[1] Herbier du Québec, 2700 Einstein, Sainte-Foy, Québec, Canada, G1P 3W8

Brachythecium populeum (Hedw.) B.S.G., *Brachythecium salebrosum* (Web. & Mohr) B.S.G., *Campylium polygamum* (B.S.G.) C. Jens., *Conocephalum conicum* (L.) Lindb., *Dicranum flagellare* Hedw., *Ditrichum flexicaule* (Schwaegr.) Hampe, *Frullania tamarisci* (L.) Dum. subsp. *asagrayana* (Mont.) Hatt., *Hedwigia ciliata* (Hedw.) P. Beauv., *Leskeella nervosa* (Brid.) Loeske, *Barbilophozia barbata* (Schmid. ex Schreb.) Loeske, *Marchantia polymorpha* L., *Orthotrichum anomalum* Hedw., *Paraleucobryum longifolium* (Hedw.) Loeske, *Plagiomnium cuspidatum* (Hedw.) Kop., *Plagiopus oederianus* (Sw.) Crum & Anderson, *Polytrichum piliferum* Hedw., *Porella platyphylloidea* (Schwein.) Lindb., *Ptilidium pulcherrimum* (G. Web.) Hampe, *Schistidium rivulare* (Brid.) Podp., *Schistostega pennata* (Hedw.) Web. & Mohr, *Tortella tortuosa* (Hedw.) Limpr., *Tortula ruralis* (Hedw.) Gaertn., Meyer & Schreb., *Weissia controversa* Hedw.

I am grateful to Mr. Pierre Masson for indications on the station of *Schistostega pennata*.

Literature Cited

Ireland, R.R., G.R. Brassard, W.B. Schofield & D.H. Vitt, 1987. Checklist of the mosses of Canada II. *Lindbergia* 13 : 1-62.

Stotler, R. & B. Crandall-Stotler, 1973. A checklist of the liverworts and hornworts of North America. *The Bryologist*, 80 : 405-428.

A new synonym of *Fissidens papillosus*

R. A. Pursell[1], M. A. Bruggeman-Nannenga[2] & Z. Iwatsuki[3]

Fissidens papillosus Sande Lac., Natuurk. Verh. K. Ak. Wet. Amsterdam 13: 1.1872. [Type. Java, in monte Pangerango altitudine 7-9000 pedum in ligna putrido, *de Vriese*, lectotype L]

F. donnellii Aust., Bot. Gaz. 4: 151. 1879. [Type. U.S.A., Florida] *syn. nov.*

This synonymy was contributed to "A Checklist of the Mosses of North America North of Mexico" (Crum, Anderson & Buck 1990) and is discussed in a paper, "Species of *Fissidens* Common to the Neotropics, Asia and Africa," to be published soon, but following the publication of the checklist, in the Proceedings of the Congress on East Asiatic Bryophytes in *Acta Botanica Fennica*.

[1] Department of Biology, Pennsylvania State University, 208 Mueller Laboratory, University Park, PA

[2] Griffenstijnse Plein 23, 3703 BE Zeist, The Netherlands

[3] Institute of Botany, Hiroshima University, Hiroshima City 730, Japan

Contribution to the Knowledge of the Lichen Flora of Hagemeister Island, Bering Sea, Alaksa

Stephen S. Talbot[1], Sandra Looman Talbot[1], & John W. Thomson[2]

Hagemeister Island, part of Alaska Maritime National Wildlife Refuge managed by the U.S. Fish and Wildlife Service, is a remote island located in the northern portion of Bristol Bay in the Bering Sea. Reindeer were introduced to the island in 1965, and in accordance with its responsibility for managing the wildland resources of the Refuge, the Service sought to assess the range condition. Lichens are known to be important in the diet of reindeer (Sjenneberg & Slagsvold 1979). The purpose of this study is to establish an initial list of lichens from a relatively small area (about 4 mi^2) in the northwestern corner of Hagemeister Island, since the lichen flora of the island is virtually unknown and there are no known published lists. The resulting list is preliminary and future studies should increase the number of species considerably.

The climate of the study area according to Tuhkanen (1987) is classed as $NB/O_1/h$, or humid province, intermediate oceanic sector of the northern boreal subzone. One of the nearest climatic stations, located at Cape Newenham appromately 40 mi west of Hagemeister Island, reports a mean annual temperature of 32.1°F and precipitation of 42.6 inches (Patric & Black 1968).

The geology of the Hagemeister Quadrangle is mapped by Hoare & Coonrad (1961). For the study area their map delimits two major types: glacial drift - poorly sorted Pleistocene sand, gravel, and boulders; and the Gemuk group - chiefly massive, altered volcanic rocks, massive to thin-bedded siliceous siltstone and chert with lesser amounts of calcareous siltstone, fine-grained graywacke, and limestone. The upper part of Gemuk is chiefly fine- and coarse-grained graywacke, siltstone, and conglomerate.

Soil development occurs on three main surficial types: glaciofluvial, coastal, and coarse- and fine-grained deposits associated with moderate and steep-sloped mountains and hills (Karlstrom et al. 1964). The most widespread soil subgroups in descending order of areal importance are Dystric Cryandepts, Fluvaquentic Cryofibrists, and Dystric Lithic Cryandepts (Reiger et al. 1987).

The landscape of Hagemeister Island is treeless. The vegetation of the study area is predominately a mosaic of dwarf shrub heath and deciduous scrub. In a schematic profile ranging from coastal marine beaches to alpine tundra, the first plant communities encountered are coastal forb beaches with *Honkenya peploides* and *Mertensia maritima*. On upper beaches these are followed by coastal graminoid-dominated communities with *Elymus arenarius, Angelica lucida*, and *Ligusticum scoticum*. The relatively gently-sloping beaches change abruptly to steep, eroding cliffs composed of glacial drift that rise 30 to 50 feet above the sea, with communities characterized by *Epilobium latifolium* and *Artemisia tilesii*.

---

[1] U.S. Fish and Wildlife Service,1011 East Tudor Road, Anchorage, Alaska 99503

[2] Department of Botany, University of Wisconsin, Madison, Wisconsin 53706

Above the cliffs and on elevated benches, the vegetation is a mosaic of graminoid meadows dominated by *Calamagrostis canadensis* and *Epilobium angustifolium*, and low deciduous scrub characterized by *Salix* spp., *Cornus suecica*, and *Epilobium angustifoium*. In sites protected from the wind, extensive thickets of Alnus crispa form with *Sambucus racemosa, Dryopteris austriaca*, and *Trientalis europaea*. On exposed upland sites, hummocky *Empetrum nigrum* dwarf shrub heaths predominate with *Ledum decumbens, Betula glandulosa, Vaccinium uliginosum, Salix arctica, Carex bigelowii*, and representatives of the lichen genera *Alectoria, Bryoria, Cetraria, Cladina, Cladonia, Nephroma, Peltigera, Sphaerophorus, Stereocaulon,* and *Thamnolia* and the bryophyte genera *Dicranum, Hylocomium, Pleurozium, Polytrichum*, and *Racomitrium*. More exposed heaths are dominated by lichens, particularly *Alectoria*, and the prostrate dwarf shrub *Loiseleuria procumbens* is usually present. These give way to fellfields on the most exposed sites.

All collections were made by the first two authors during the period July 21 to 24 1987 and the collection numbers are theirs. All determinations are by the third author. Voucher specimens are in the herbarium at the University of Wisconsin (WIS). Species nomenclature follows Egan (1987, 1989). Data for the collections follow:

A. 58°44'N, 160°52'W. Hagemeister Island (C-3) Quadrangle
    (1) Hummocky *Empetrum nigrum* heath. Elevation 265 ft.
    (2) *Carex bigelowii - Vaccinium uliginosum* wet meadow. Elevation 250 ft.
    (3) Open *Salix* scrub with *Empetrum nigrum* hummocks. Elevation 245 ft.
    (4) *Polytrichum* hummock. Elevation 200 ft.
    (5) Epiphytic on *Alnus crispa*. Elevation 200 ft.
    (6) Lichen tundra on ridge crest. Elevation 190 ft.
    (7) *Alnus crispa* scrub. Elevation 190 ft.
    (8) Hummocky *Empetrum nigrum* tundra. Elevation 20 ft.
    (9) Epiphytic on *Alnus crispa*. Elevation 190 ft.

B. 58°42'N, 161°01'W. Hagemeister Island (C-4) Quadrangle
    (1) Epiphytic on *Alnus crispa*. Elevation 350 ft.
    (2) On mineral soil. Elevation 350 ft.
    (3) Epilithic. Elevation 350 ft.

C. 58°45'N, 160°48'W. Hagemeister Island (D-3) Quadrangle
  (1) Dwarf shrub peatland. Elevation 430 feet.
  (2) Epiphytic on *Alnus crispa*. Elevation 430 ft.

D. 58°43'N, 160°56'W. Hagemeister Island (C-3) Quadrangle
  (1) On moss in fellfield. Elevation 800 ft.
  (2) Epilithic in fellfield. Elevation 800 ft.
  (3) Fellfield. Elevation 800 ft.
  (4) On soil in fellfield. Elevation 800 ft.

List of Species

Sixty three species are reported from Hagemeister Island. The collection site initials are given first with habitat information included in parentheses. Specimen numbers follow and are underlined.

Alectoria nigricans (Ach.) Nyl. A(6):H8701-18B; D(1):H8705-6A.
Asahinea chrysantha (Tuck.) Culb. & Culb. A(6):H8701-24.
Bryocaulon divergens (Ach.) Kärnef. A(6):H8701-12.
Buellia erubescens Arnold A(5):H61 (in mixture with *Melanelia septentrionalis* and *Caloplaca holocarpa*).
Caloplaca holocarpa (Hoffm.) Wade A(5):H61 (in mixture with *Melanelia septentrionalis* and *Buellia erubescens*).
Cetraria andrejevii Oxner A(6):H8701-20.
C. commixta (Nyl.) Th. Fr. D(2):H8705-19.
C. cucullata (Bellardi) Ach. A(6):H8701-18.
C. ericetorum Opiz A(6):H8701-23.
C. hepatizon (Ach.) Vainio D(2):H8705-17.
C. laevigata Rass. A(3):H30; A(6):H8701-18C.
C. nivalis (L.) Ach. D(3):H8708-5.
Cladina mitis (Sandst.) Hustich A(6):H8701-16A.
C. stellaris (Opiz) Brodo A(6):H8701-30.
C. stygia (Fr.) Ahti A(6):H8701-12A, -15.
Cladonia bellidiflora (Ach.) Schaerer A(1):H6A, H12.
C. coccifera (L.) Willd. A(6):H8701-14.
C. cornuta (L.) Hoffm. A(1):H6; C(1):H111.
C. crispata (Ach.) Flotow A(1):H9A.
C. fimbriata (L.) Fr. A(4):H56; A(5):H63; C(1):H110.
C. maxima (Asah.) Ahti A(1):H3, H9; A(6):H8701-29; A(8):H8715-14.
C. subfurcata (Nyl.) Arnold A(2):H26.
C. sulphurina (Michaux) Fr. A(4):H57; A(9):H8702-11.
Icmadophila ericetorum (L.) Zahlbr. A(2):H28.
Lecanora circumborealis Brodo & Vitik. A(5):H62; A(9):H8702-12; C(2):H107.

L. intricata (Ach.) Ach. D(2):H8705-13.

L. polytropa (Hoffm.) Rabenh. D(2):H8705 (in mixture with *Rhizocarpon geographicum*).

L. symmicta Ach. A(9):H62 (in mixture with L. *circumborealis*).

Lecidea atrobrunnea (Ramond *in* Lam. & DC.) Schaerer D(2):H8705-31 (in mixture with *Pertusaria subplicans* and *Rhizocarpon geographicum*).

L. lapicida (Ach.) Ach. D(2):H8705-12.

L. lithophila (Ach.) Ach. D(2):H8705-10.

Lobaria linita (Ach.) Rabenh. A(1):H15.

Melanelia septentrionalis (Lynge) Essl. A(5):H61.

M. stygia (L.) Essl. D(2):H8705-24.

Nephroma arcticum (L.) Torss. A(1):H1.

N. bellum (Sprengel) Tuck. A(9):H8702-9; B(1):H72A.

Ochrolechia frigida (Swartz) Lynge A(6):H8701-17.

O. subplicans (Nyl.) Brodo D(2):H8705-11, -31.

Parmelia omphalodes (L.) Ach. D(2):H8705-30.

P. sulcata Taylor A(9):H60.

Peltigera horizontalis (Huds.) Baumg. B(2):H74A.

P. leucophlebia (Nyl.) Gyelnik A(1):H11.

P. polydactyla (Necker) Hoffm. A(3):H34.

P. rufescens (Weis.) Humb. A(1):H11A.

P. scabrosa Th. Fr. A(1):H10.

Pertusaria dactylina (Ach.) Nyl. D(1):H8705-1; -27.

Phylliscum demangeonii (Moug. & Mont. in Mont.) Nyl. D(2):H8705-22. This species was previously reported from southeastern Alaska by Herre (1919).

Platismatia lacunosa (Ach.) Culb. & C. Culb. B(3):H76.

Porpidia flavicunda (Ach.) Gowan D(2):H8705-16.

P. speirea (Ach.) Krempelh. D(2):H8705-31 (in mixture with *Pertusaria subplicans* and *Rhizocarpon geographicum*).

Pseudephebe pubescens (L.) M. Choisy D(2):H8705-20.

Psoroma hypnorum (Vahl) Gray A(6):H8701-16; D(1):H8705-5.

Rhizocarpon anseris Lynge D(2):H8705-3. New to North America. This species was collected at Frobisher Bay (Thomson #13229) and listed in the as yet unpublished volume II of Thomson. It is known from Novaya Zemlya in the northwestern U.S.S.R. (Lynge 1928).

R. geographicum (L.) DC. D(2):H8705-4, -7.

Sphaerophorus fragilis (L.) Pers. D(2):H8705-18.

S. globosus (Huds.) Vainio A(6):H8701-13.

Stereocaulon botryosum Ach. D(2):H8708-8.

S. glareosum (Savicz) Magnusson D(4):H8705-6.

S. paschale (L.) Hoffm. A(6):H8701-26.

Thamnolia subuliformis (Ehrh.) Culb. A(6):H8701-15A.

T. vermicularis (Swartz) Ach. *ex* Schaerer A(6):H8701-9, -18A.

Tremolecia atrata (Ach.) Hertel D(2):H8705-12 (in mixture with *Lecidea lapicida*).
Umbilicaria hyperborea (Ach.) Hoffm. D(2):H8705-15.

Acknowledgements. Financial support for this study was provided by the Alaska Maritime National Wildlife Refuge, U. S. Fish & Wildlife Service, Homer, Alaska. We are thankful to Nils E. Talbot who provided field assistance.

References

Egan, R. S. 1987. A fifth checklist of lichen-forming, lichenicolous and allied fungi of the continental United States and Canada. *The Bryologist* 90: 77-173.

______. 1989. Changes to the "Fifth checklist of the lichen-forming, lichenicolous and allied fungi of the continental United States and Canada." Edition I. *The Bryologist* 92: 68-72.

Herre, A. W. C. T. 1919. A list of lichens from southeast Alaska. *Publications of the Puget Sound Biological Station* 2: 279-285.

Hoare, J. M. & W. L. Coonrad. 1961. Geologic map of the Hagemeister Island Quadrangle, Alaska. *Miscellaneous Geologic Investigations Map* I-321. U. S. Geological Survey, Washington, D.C.

Karlstrom, T. N. V., H. W. Coulter, A. T. Fernald, J. R. Williams, D. M.Hopkins, T. L. Pewe, H. Drews, E. H. Muller, & W. H. Condon. 1964. Surficial geology of Alaska. *U.S. Geological Survey Miscellaneous Geological Investigations Map* I-357.

Lynge, B. 1928. Report of the scientific results of the Norwegian Expedition to Novya Zemlya 1921. No. 43:1-299.

Patric, J. H. & P. E. Black. 1968. Potential evapotranspiration and climate in Alaska by Thornthwaite's classification. *U.S.D.A. Forest Service Research Paper PNW-71*. Pacific Northwest Forest & Range Experiment Station, Portland, Oregon. 28 pp.

Rieger, S., D. D. Schoephorster, & C. C. Furbush. 1979. *Exploratory soil survey of Alaska*. U. S. Department of Agriculture, Soil Conservation Service, Anchorage, Alaska. 213 pp. + maps.

Sjenneberg, S. & L. Slagsvold. 1979. Reindeer husbandry and its ecological principles. Bureau of Indian Affairs, Juneau, Alaska. Deehr, T. T., translator. Anderson, C. M. & J. R. Luick, eds. *Reindriften og dens Naturgrunnlag*. Universitetsforlaget, Oslo. 395 pp.

Thomson, J. W. *American arctic lichens II. The microlichens*. Submitted for publication, Columbia University Press.

Tuhkanen, S. 1987. The phytogeographic position of the Faeroe Islands and their climatic correspondence on the other continents: problems associated with highly oceanic areas. *Annales Botanici Fennici* 24: 111-135.

Checklist of Bryophytes of Churchill, Manitoba, Canada

Peter A. Scott[1]

During the late 1940's and 1950's, extensive collections of bryophytes were made around Churchill, Manitoba (58°45' N, 94°4' W) mainly by E. Beckett, D. K. Brown, H. Crum, J. Gillett, J. C. Ritchie, and W. B. Schofield. Much of this material has been used to contribute to provincial (Ireland et al. 1980, 1987) and regional descriptions of moss flora (Bird, 1973; Crum and Anderson, 1981). Later collections by Longton during the 1970's have added to the moss flora for Manitoba (Longton 1972, 1981). Further collections by the author along with T. J. Carleton at the University of Toronto, during the 1980's, have been made to establish a reference collection at the Churchill Northern Studies Centre (CNSC). Duplicates of these collections were sent to the Canadian Museum of Nature (CANM) for identification and many are subsequently available there.

To outline the collection at the CNSC, a search at CANM for specimens from Churchill was undertaken so that a comprehensive list of species could be established. It was found that some of the specimens were only identified with localities or sub-regions within the Churchill area and hence, were not identified with Churchill or even Manitoba in some cases. In addition to this, the communities of Akudlik, Dene Village, and Fort Churchill have all been abandoned and then removed. As these sites regenerate it will be far more difficult to locate them.

Results and Discussion: This checklist of the bryophytes found at Churchill is composed of 160 species of Musci and 18 of Hepaticae placed in alphabetical order by genus. It was determined that all of the collections from the Churchill region have been made in a very localized area ranging from 93°45' W in the east to 94°20' W in the west and 58°35' N in the south to the Hudson Bay coast at approximately 58°47' N. The following localities within the sampling region were found on specimen labels at CANM: Akudlik; Beech Bay; Bird Cove; Button Bay; Cape Churchill; Cape Merry; Christmas Lake (Esker); Cockle's Point; Dene Village; Eskimo Point (Man.); Fort Churchill; Fort Prince of Wales; Goose Creek; Halfway Point; Knight's Hill (Esker); Landing Lake; La Perouse Bay; Mosquito Point; Stygge Creek; Twin Lake (s, Hill); Warkworth (Creek, Lake).

The nomenclature of Musci follows Ireland et al. (1980, 1987) and lists of synonyms can be found there as well. The nomenclature of Hepaticae follows Stotler and Crandall-Stotler (1977). As well as many new records for Churchill, there are apparently 13 new records or specimens (indicated by an asterisk) that confirm reports for the Province of Manitoba (indicated by an asterisk) since Ireland et al. (1987). The species names are followed by the number of Churchill specimens in CANM (in brackets), up to two voucher specimen accession numbers and, the location of the specimen if not CANM (either CNSC which are not numbered or the private herbarium of R. R. Longton). Some synonyms which help locate the specimens in CANM are given in [].

---

[1] Department of Zoology, University of Toronto, Toronto, Ontario, Canada. M5S 1A1

I. Musci
Aloina brevirostris (Hook. & Grev.) Kindb. -- (4) 131933, 223029
Amblyodon dealbatus (Hedw.) B. S. G. -- (9) 149198-149206
Amblystegium humile (P. Beauv.) Crundw. -- (2) 171687, 171692
A. riparium (Hedw.) B. S. G. -- (2) 171441, 171444
A. serpens (Hedw.) B. S. G. -- (3) 172154, 172170
A. serpens var. *juratzkanum* (Schimp.) Rau & Harv. -- (2) 172319, 172320
Aulacomnium acuminatum (Lindb. & H. Arnell) Kindb. -- (1) 148118
A. palustre (Hedw.) Schwaegr. -- (14) 284239, 148568
A. turgidum (Wahlenb.) Schwaegr. -- (12) 284245, 223931
Barbula convoluta Hedw. -- (1) 127862
Brachythecium acutum (Mitt.) Sull. -- (4) 178451-178454
B. albicans (Hedw.) B. S. G. -- (1) 300857
B. salebrosum (Web. & Mohr) B. S. G. -- (7) 180425, 221876
B. turgidum (C.J. Hartm.) Kindb. -- (3) 180853, 284243
Bryoerythrophyllum recurvirostrum (Hedw.) Chen -- (15) 127521, 127540
*Bryum *acutiforme* Limpr. ex Hag. -- (1) 142295
*B. *arcticum* (R.Br.) B.S.G. -- (15) 142506, 250839
B. argenteum Hedw. -- (3) 142567, 138581
B. algovicum Sendtn. ex C. Müll -- (12) 142404-142412
B. blindii B.S.G. -- (1) 142778
*B. *calophyllum* R.Br. -- (5) 142863, 142998
B. knowltonii Barnes -- (4) 143753-143756
B. lisae var. *cuspidatum* (B.S.G.) Marg. -- (20) 143350, 143374
B. pallescens Schliech ex Schwaeger. -- (1) 221177
B. pseudotriquetrum (Hedw.) Gaertn., Meyer, & Scherb. -- (18) 221180, 225093
*B. *salinum* Hag. ex Limpr. -- (1) 144629
*B. *teres* Lindb. -- (1) 144755
B. uliginosum (Brid.) B.S.G. -- (1) 144898
*B. *wrightii* Sull. & Lesq. -- (1) 145008
Calliergon cordifolium (Hedw.) Kindb. -- (3) 176185, 222121
C. giganteum (Schimp.) Kindb. -- (12) 176348, 284235
C. richardsonii (Mitt.) Kindb. ex Warnst. -- (6) 176488, 176496
C. sarmentosum (Wahlenb.) Kindb. -- (4) 176559-176562
C. stramineum (Brid.) Kindb. -- (5) 176701, 222051
C. trifarium (Web. & Mohr) Kindb. -- (0) (Longton, 1972)

Campylium hispidulum var. *sommerfelti* (Myr.) Lindb. -- (1) 171132
C. polygamum (B.S.G.) C. Jens. -- (10) 171154-171159
C. stellatum (Hedw.) C. Jens. -- (7) 171257, 222178
Catoscopium nigritum (Hedw.) Brid. -- (11) 129860, 284244
Ceratodon purpureus (Hedw.) Brid. -- (4) 203768, 225269
Cinclidium latifolium Lindb. -- (9) 147709-147716
C. stygium Sw. -- (10) 147650, 147793
*Cnestrum *glaucescens* (Lindb. & H. Arnell) Holm. ex Mog. & Steere -- (1) 117560
Cynodontium strumiferum (Hedw.) Lindb. -- (5) 117660, 117666
C. tenellum (B.S.G.) Limpr. -- (10) 117558-117565
Desmatodon heimii (Hedw.) Mitt. -- (0) Longton 2818 [*Pottia heimii*]
D. latifolius (Hedw.) Brid. -- (1) 131689
Dichelyma falcatum (Hedw.) Myr. -- (1) 158275
Dicranella grevilleana (Brid.) Schimp. -- (3) 114708-114710
D. varia (Hedw.) Schimp. -- (1) 114930
Dicranum acutifolium (Lindb. & H. Arnell) C. Jens. ex Weinm. -- (1) 284231
D. angustum Lindb. -- (4) 119430, 120492
D. bonjeanii De Not. ex Lisa -- (2) 119502, 119503
D. brevifolium (Lindb.) Lindb. -- (1) 120688
D. elongatum Schleich. ex Schwaegr. -- (9) 119688, 284226
D. fragilifolium Lindb. -- (1) 119192
D. fuscescens Sm. -- (5) 120202, 120208
D. groenlandicum Brid. -- (13) 120485, 221505
D. muehlenbeckii B. S. G. -- (7) 120689, 223757
D. polysetum Sw. -- (1) 120871
D. scoparium Hedw. -- (7) 121255, 226721
D. spadiceum Zett. -- (3) 121672, 284242
D. undulatum Brid. -- (11) 121925, 284227
*Didymodon *rigidulus* Hedw. -- (1) 128348
Distichium capillaceum (Hedw.) B. S. G. -- (12) 113799, 225776
D. inclinatum (Hedw.) B. S. G. -- (15) 114114, 114122
Ditrichum flexicaule (Schwaegr.) Hampe -- (5) 112469, 112480
Drepanocladus aduncus (Hedw.) Warnst. var aduncus -- (6) 172936, 222008
D. aduncus var. *kneiffii* (B.S.G.) Mönk. -- (1) 173205
D. aduncus var. *polycarpus* (Bland ex Voit) Roth -- (2) 173392, 173407
D. capillifolius (Warnst.) Warnst. -- (3) 173388-173390
D. exannulatus (B.S.G.) Warnst. -- (9) 173589, 173610
D. fluitans (Hedw.) Warnst. -- (2) 173846, 222187
D. lycopodiodes var. *brevifolius* (Lindb.) Mönk. -- (1) 284230
*D. *revolvens* (Sw.) Warnst. -- (5) 174154, 174166
D. revolvens var. *intermedius* (Lindb. ex C. Hartm.) Grout -- (2) 222084, 226309
D. sendtneri (Schimp.) Warnst. -- (1) 174400
D. tundrae (H. Arnell) Loeske -- (3) 173793-173795

D. uncinatus (Hedw.) Warnst. -- (12) 174642, 174664
D. vernicosus (Mitt.) Warnst. -- (17) 175138, 175151
Encalypta alpina Sm. -- (3) 123967, 223052
E. procera Bruch -- (7) 124200, 250818
E. rhaptocarpa Schwaegr. -- (13) 124301, 250728
Fissidens bryoides Hedw. -- (2) 109011, 109062
F. osmundoides Hedw. __ (2) 109972, 109982
Fontinalis hypnoides C. J. Hartm. -- (1) 267937
Funaria hygrometrica Hedw. -- (10) 138568, 223367
Grimmia affinis Hoppe & Hornsch. ex Hornsch. -- (0) Longton 2778
Gymnostomum [Hymenostylium] recurvirostrum Hedw. -- (4) 125545-125548
Hedwigia ciliata (Hedw.) P.Beauv. -- (1) 158934
*Hylocomium *splendens* (Hedw.) B. S. G. var. obtusifolium (Geh.) Par.
H. splendens var. *splendens* -- (14) 193088, 222567
Hypnum bambergeri Schimp. -- (12) 187301, 187308
H. cupressiforme Hedw. -- (0) Longton 2811
H. hamulosum B.S.G. -- (13) 188277, 267952
H. lindbergii Mitt. -- (6) 175500, 222845
H. pratense W. Koch ex Spruce -- (6) 188859, 188867
H. revolutum (Mitt.) Lindb. -- (14) 189069, 284228
*H. *subimponens* Lesq. -- (0) (Longton, 1981)
H. vaucheri Lesq. -- (7) 187763, 267956
Isopterygium pulchellum (Hedw.) Jaeg. & Sauerb. -- (4) 190178, 284246
Loeskypnum [Drepanocladus] badium (C. J. Hartm.) Paul -- (6) 130177, 231397
Leptobryum pyriforme (Hedw.) Wils. -- (7) 142166, 284241
Meesia longiseta Hedw. -- (1) 149456 [M. hexasticha]
M. triquetra (Richt.) Ångstr. -- (5) 149302-149306 [including *M. tristicha* B. S. G.]
M. uliginosa Hedw. -- (13) 149444, 149456
Minium marginatum (With.) Brid. ex P. Beauv. -- (8) 146476, 250856
Myurella julacea (Schwaegr.) B. S. G. -- (6) 165764, 250858
M. tenerrima (Brid.) Lindb. -- (2) 267964, 165966
Oncophorus virens (Hedw.) Brid. -- (8) 118559-118565
O. wahlenbergii Brid. -- (13) 118688, 250836
Orthothecium chryseum (Schwaegr. ex Schultes) B. S. G. -- (2) 183630, 183631
O. strictum Lor. -- (3) 183789, 267969
*Orthotrichum *sordidum* Sull. & Lesq. ex Aust. -- (11) 153320, 250842
O. speciosum Nees ex Sturm -- (17) 153864, 250826
Paludella squarrosa (Hedw.) Brid. -- (7) 149074, 224334
Philonotis fontana (Hedw.) Brid. var. pumila (Turn.) Brid. -- (2) 150911, 150913
Plagiomnium ellipticum (Brid.) Kop. -- (16) 155911, 284233
P. medium (B.S.G.) Kop. -- (2) 198417, 220092
Plagiothecium denticulatum (Hedw.) B. S. G. -- (2) 184905, 184907
P. laetum B. S. G. -- (3) 184966, 267970

Platydictya jungermannioides (Brid.) Crum --(8) 172725-172732
Pleurozium schreberi (Brid.) Mitt. -- (4) 184500, 221807
Pohlia cruda (Hedw.) Lindb. -- (9) 140506, 221439
P. nutans (Hedw.) Lindb. -- (6) 141040, 221468
Polytrichum alpinum var. *fragile* (Bryhn) Nyh. -- (2) 194732, 194733
P. hyperboreum R. Br. -- (2) 196886, 267980
P. juniperinum Hedw. -- (4) 195938, 224203
P. longisetum Brid. -- (3) 195739, 267979
P. piliferum Hedw. -- (2) 196716, 196718
P. strictum Brid. -- (4) 196274, 224279
Pylaisiella polyantha (Hedw.) Grout -- (0) Longton 2783, 2787
Rhacomitrium lanuginosum (Hedw.) Brid. --(1) 137391
Rhizomnium gracile Kop. -- (5) 145471, 220923
R. pseudopunctatum (Bruch & Schimp.) Kop. -- (9) 146867-146874
Rhytidium rugosum (Hedw.) Kindb. -- (5) 191563, 284232
Schistidium [Grimmia] apocarpum (Hedw.) B. & S. in B. S. G. -- (2) 134469, 134474
S. rivulare (Brid.) Podp. -- (6) 133982, 133991
Scorpidium scorpioides (Hedw.) Limpr. -- (16) 177136, 221656
S. turgescens (T. Jens.) Loeske -- (11) 129833, 221780
Sphagnum angustifolium (C. Jens. ex Russ.) C. Jens. -- (0) CNSC
S. capillifolium (Ehrh.) Hedw. -- (2) 102677, 284237
S. fuscum (Schimp.) Klinggr. -- (6) 103369, 219782
S. girgensohnii Russ. -- (4) 103511, 103600
*S. *imbricatum* Horsch. ex Russ. -- (1) 300862
S. lindbergii Schimp. ex Lindb. -- (1) 103901
S. riparium Ångstr. -- (3) 1050311-105033
S. rubellum Wils. -- (0) CNSC
S. russowii Warnst. -- (2) 102681, 284238
S. squarrosum Crome -- (2) 105396, 105397
S. warnstorfii Russ. -- (14) 106014, 221501
Splachnum sphaericum Hedw. -- (3) 139672, 139675
Stegonia latifolia var. *pilifera* (Brid.) Broth. -- (2) 129248, 129249
Tayloria lingulata (Dicks.) Lindb. -- (10) 138954, 138963
Tetraphis pellucida Hedw. -- (1) 139977
Tetraplodon angustatus (Hedw.) B. S. G. -- (2) 139147, 139148
T. mnioides (Hedw.) B. S. G. -- (15) 139260, 250833
Thuidium abietinum (Hedw.) B. S. G. -- (4) 170032, 284234
Timmia megapolitana var. *bavarica* (Hessl.) Brid. -- (3) 151937, 224071
T. norvegica Zett. -- (8) 152096, 224083
Tomenthypnum nitens (Hedw.) Loeske -- (10) 177969, 273565
Tortella fragilis (Drumm.) Limpr. -- (5) 126223, 126228
Tortula mucronifolia Schwaegr. -- (5) 132431, 132443
T. norvegica (Web.) Wahlenb. ex Lindb. -- (2) 132637, 132638

T. ruralis (Hedw.) Gaertn., Meyer, & Scherb. -- (5) 133079, 284229

II. Hepaticae

Anastrophyllum minutum (Schreb.) Schust. -- (2) 9756, 9741
Aneura pinguis (L.) Dum. -- (1) 8604
Anthelia juratzkana (Limpr.) Trev. -- (1) 241
Barbilophozia attenuata (Mårt.) Loeske -- (0) (Longton, 1972)
B. hatcheri (Evans) Loeske -- (2) 10743, 13998
B. kunzeana (Hüb.) Gams -- (0) (Longton, 1972)
Blepharostoma trichophyllum (L.) Dum. -- (5) 1208, 1291
Calypogeia muelleriana (Schiffn.) K. Müll. -- (0) (CNSC), (Longton, 1972)
Cephalozia lunulifolia (Dum.) Dum. -- (0) (CNSC)
Cephaloziella arctica Bryhn et Douin -- (0) (CNSC)
Lepidozia reptans (L.) Dum. -- (0) (CNSC)
Lophozia incisa (Schrad.) Dum. -- (1) 10744
Marchantia polymorpha L. -- (5) 14226, 14234
Moerckia hibernica (Hook.) Gott. -- (1) 6227
Plagiochila porelloides (Torrey ex Nees) Lindenb. -- (3) 6873, 10747
Ptilidium ciliare (L.) Hampe -- (4) 7891, 13426
P. pulcherrimum (G. Web) Hampe -- (1) 8097
Scapania curta (Mart.) Dum. -- (1) 13619

Acknowledgements. I thank R. Ireland and L. Ley for their kindly assistance and for identifying the specimens. Helpful comments were provided by R. Ireland, D. Vitt and W. Reese. Field work was aided by M. Campbell, T. Carleton, J. Warren and C. Bentley. R. Longton provided a list of specimens from his personal collection. Support was provided by the Churchill Northern Studues Centre, Boreal Projects Ltd., Churchill, and a grant to the author from Indian and Northern Affairs, Canada.

Literature Cited

Bird, C. D. 1973. A new catalogue of the bryophytes reported from Alberta, Saskatchewan, and Manitoba. Unpublished report.

Crum, H. and L. E. Anderson. *Mosses of Eastern North America*. Columbia University, New York.

Ireland, R. R., C. D. Bird, G. R. Brassard, W. B. Schofield, and D. H. Vitt. 1980. Checklist of the Mosses of Canada. *National Museums of Canada Publications in Botany*, No. 8, 75 pp.

Ireland, R. R., G. R. Brassard, W. B. Schofield, and D. H. Vitt. 1987. Checklist of the Mosses of Canada II. *Lindbergia* 13: 1-62.

Longton, R. E. 1972. Nineteen bryophytes new to Manitoba. *Bryologist* 75: 348-350.

Longton, R. E. 1981. Further additions to the bryophyte flora of Manitoba. *Bryologist* 84: 569-570

Stotler, R. and B. Crandall-Stotler. 1977. A checklist of the liverworts and hornworts of North America. *Bryologist* 80: 405-428.

A Third Record for Tortella flavovirens on the Northern Gulf Coast

William D. Reese[1]

Tortella flavovirens (Bruch ex F. Müll.) Broth. is an uncommon and little-known moss of calcareous seaside sites in the southeastern United States and elsewhere in the northern hemisphere (Crum & Anderson 1981). Previously known from only two stations along the northern Gulf Coast (Reese 1984), *T. flavovirens* is here reported from a third site.

> **Alabama. Baldwin County: Mortar-work on old Fort Morgan on E side of mouth of Mobile Bay, *W.L. Reese s.n.*, July 1990 (LAF, MO).**

The two previously known collections of *T. flavovirens* from the northern Gulf Coast are from Aransas Co., Texas (Webster & Wilbur 647, MICH), and Mobile Co., Alabama (Reese 11477, LAF, MICH, MO). The latter station--also an old fort--is across the mouth of Mobile Bay from the location of the collection cited above. While the other two specimens of *T. flavovirens* from the northern Gulf Coast are sterile, the present collection bears a few old sporophytes. The Fort Morgan plants were growing with *Weissia controversa* Hedw. and *Bryum* sp. I thank W. L. Reese for collecting the specimen.

Literature Cited

Crum, H.A. & L.E. Anderson. 1981. *Mosses of Eastern North America.* New York.
Reese, W.D. 1984. *Mosses of the Gulf South.* Baton Rouge.

---

[1] Department of Biology, Box 42451, University of Southwestern Louisiana, Lafayette, LA 70504-2451.

New York Botanical Garden Library
3 5185 00349 6690

EVANSIA
The Missouri Botanical Garden
P.O. Box 299
St. Louis, MO 63166-0299 USA

Luesther T Mertz
LIBRARY
MAY 24 2000
NEW YORK
BOTANICAL GARDEN